



agriculture, land reform & rural development

Department:
Agriculture, Land Reform and Rural Development
REPUBLIC OF SOUTH AFRICA

PROVINCIAL SHARED SERVICE CENTRE: MPUMALANGA

Private Bag X11305, Nelspruit, 1200; Tel: 013 754 8000 Web: www.dalrrd.gov.za

Enquiries: A Nkuna

Tel no. email as indicated

SUPPLY CHAIN MANAGEMENT Request for Quotation(s) (RFQ)/ Proposals

REQUEST FOR THE QUOTATION.

Dear Sir or Madam

You are hereby invited to submit a quotation for the supply and delivery of the following goods/assets/ service to the Department of Rural Development and Land Reform (DRDLR)

| Item # | Description | Qty |
|--------|---|---------|
| 1 | APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF ONE HOUSE FOR A FAMILY IN WAAIKRAAL IN EMAKHAZENI LOCAL MUNICIPALITY WITHIN NKANGAL DISTRICT IN MPUMALANGA PROVINCE | 1 house |

Closing Date: 18/10/2022

Closing Time: 11h00

Please submit your quotation on your company official letter head and clearly indicate your Lead Time, Validity Period of your quotation and the total amount including vat.

The quotation must be emailed to ANKuna2@dalrrd.gov.za on or before the closing date and time. All documentation/ certificates indicated on specification Tax clearance certificate, BBBEE Certificate, SBD Forms must be attached and are compulsory. Please attach your quotation separately

REQUIREMENTS ARE:

1. CIDB REGISTRATION

Grade 2GB or higher

2. RELEVANT EXPERIENCE OF SIMILAR PROJECTS

Tenderers are required to provide relevant experience and competency by attaching completion certificates of previous completed projects

3. EXPERIENCE OF SITE AGENT

The proposed Site Agent must have experience and qualification: CV Minimum of 3 years' experience in construction as Site Agent, NQF level 4 required for Site Agent



Department of Agriculture, Land Reform and Rural Development · Departement van Landbou, Grondhervorming en Landelike Ontwikkeling ·
Muhasho wa zwa Vhu- limi, Mbuedzedzo ya Mavu na Mveledziso ya Mahayani · uMnyango Wezolimo, Izinguquko Kwezomhlaba Nokuthukiswa
Kwezindawo Zasemakhaya · Ndawulo ya Vurimi, Antswiso wa Misava na Nhluvukiso wa Matikoxikaya · Litiko Letekulima, Tingucuko Kutemhlaba
Nekutfutukiswa Kwetindzawo Tasemaphandleni · UmNyango wezokuLima, ukuBuyiselwa kweNarha nokuThuthukiswa kweNdawo zemaKhaya
· Kgoro ya Temo, Peakanyoleswa ya Naga le Tihabollo ya Dinaga- magae · Lefapha la Temothuo, Kabobotjha ya Naha le Tihabollo ya Dibaka tsa
Mahae · Lefapha la Temothuo, Pusetso dinaga le Tihabollo ya Metsemagae · ISebe lezoLimo, uBuyekezo lwemiHlaba noPhuhliso
lamaPhandle

4. PROOF OF RESOURCES

List of resources (owned or to be hired) to be utilized for the duration of the projects. Tenderers should provide the list of equipment, plant resource required to complete the project with proof of ownership and/or proof that such plant or equipment will be hired

5. MANDATORY REQUIREMENTS

Failure to comply with the following requirements and to submit the following documents with the proposal will disqualify the bidder's proposal.

- 5.1. Compliance with all Tax Clearance requirements. Attach Valid Tax Clearance Certificate/ Compliance tax Pin issued by the South African Revenue Services (SARS). Where Consortium/joint ventures/sub-contractor are involved each party to the association must submit a separate Valid Tax Clearance Certificate.
- 5.2. Bidders are required to be registered on the Central Supplier Database (CSD) and the Department of Rural Development & Land Reform shall verify the Bidder's tax compliance status through CSD
- 5.3. Letter of Resolution authorizing a particular person to sign the bid documents.
 - (a) In the case of a **ONE PERSON CONCERN** submitting a tender, this shall be clearly stated on the company letter head.
 - (b) In the case of a **COMPANY** submitting a tender, include a copy of a resolution by its board of directors authorizing a director or other official of the company to sign the documents on behalf of the company.
 - (c) In the case of a **CLOSED CORPORATION** submitting a tender, include a copy of a resolution by its members authorizing a member or other official of the corporation to sign the documents on each member's behalf.
 - (d) In the case of **PARTNERSHIP** submitting a tender, all the partners shall sign the documents, unless one partner or a group of partners has been authorized to sign on behalf of each partner, in which case proof of such authorization shall be included in the Tender.
 - (e) In the case of **JOINT VENTURE** submitting a tender, must include a resolution of each company of the Joint Venture together with a resolution by its members authorizing a member of the Joint Venture to sign the documents on behalf of the Joint Venture.
- 5.4. Fully completion of SBD documents: SBD 1, SBD 4, SBD 6.1, SBD 8 and SBD 9

TERMS AND CONDITIONS : If the Supplier fails to deliver any or all goods or to perform services within the specified period in the Order/Contract, the purchaser may as a penalty deduct from the Order/Contract price a sum of the delayed goods or unperformed services ,or terminate the contract in part or in whole.

Yours faithfully


Mr. ALPHEUS NKUNA
For: Demand and Acquisition Management
Date: 12/10/ 2022
013 754 8034

Technical inquiry: Xoliswa ngcobo
Tel no: 083 780 9963 or xoliswa.ngcobo@dalrrd.gov.za



Department of Agriculture, Land Reform and Rural Development · Departement van Landbou, Grondhervorming en Landelike Ontwikkeling ·
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Mahae · Lefapha la Temothuo, Pusetso dinaga le Tihabollo ya Metsemagae · ISebe lezoLimo, uBuyekezo lwemiHlaba noPhuhliso
lamaPhandle

PART A INVITATION TO BID

| | | | | | |
|--|---|---------------|------------|---------------|-------|
| YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE DEPARTMENT OF RURAL DEVELOPMENT AND LAND REFORM | | | | | |
| BID NUMBER: | 22/23/107A | CLOSING DATE: | 18/10/2022 | CLOSING TIME: | 11:00 |
| DESCRIPTION | APPOINTMENT OF A CONTRACTOR FOR THE CONSTRUCTION OF ONE HOUSE FOR A FAMILY IN WAAIKRAAL IN EMAKHAZENI LOCAL MUNICIPALITY WITHIN NKANGAL DISTRICT IN MPUMALANGA PROVINCE | | | | |

THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).

BID RESPONSE DOCUMENTS MAY BE SUBMITTED TO:

BID RESPONSE MUST BE DEPOSITED INTO THE TENDER/BID BOX SITUATED AT:
 DEPARTMENT OF RURAL DEVELOPMENT AND LAND REFORM
 MPUMALANGA SHARED SERVICE CENTRE,
 17 VAN RENSBURG STREET, BATELEUR BUILDING, BLOCK E, SIXTH FLOOR.
 NELSPRUIT OR EMAIL Ankuna2@dalrrd.gov.za

SUPPLIER INFORMATION

| | | | |
|--|---|-------------------------------------|--|
| NAME OF BIDDER | | | |
| POSTAL ADDRESS | | | |
| STREET ADDRESS | | | |
| TELEPHONE NUMBER | CODE | | NUMBER |
| CELLPHONE NUMBER | | | |
| FACSIMILE NUMBER | CODE | | NUMBER |
| E-MAIL ADDRESS | | | |
| VAT REGISTRATION NUMBER | | | |
| | | | |
| | | TCS PIN: | |
| | | OR | CSD No: |
| B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE [TICK APPLICABLE BOX] | <input type="checkbox"/> Yes <input type="checkbox"/> No | B-BBEE STATUS LEVEL SWORN AFFIDAVIT | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| IF YES, WHO WAS THE CERTIFICATE ISSUED BY? | | | |
| AN ACCOUNTING OFFICER AS CONTEMPLATED IN THE CLOSE CORPORATION ACT (CCA) AND NAME THE APPLICABLE IN THE TICK BOX | | <input type="checkbox"/> | AN ACCOUNTING OFFICER AS CONTEMPLATED IN THE CLOSE CORPORATION ACT (CCA) |
| | | <input type="checkbox"/> | A VERIFICATION AGENCY ACCREDITED BY THE SOUTH AFRICAN ACCREDITATION SYSTEM (SANAS) |
| | | <input type="checkbox"/> | A REGISTERED AUDITOR |
| | | NAME: | |

[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/SWORN AFFIDAVIT (FOR EMEs & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]

| | | | |
|--|--|--|--|
| ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED? | <input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES ENCLOSE PROOF] | ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED? | <input type="checkbox"/> Yes <input type="checkbox"/> No [IF YES ANSWER PART B:3 BELOW] |
| SIGNATURE OF BIDDER | | DATE | |
| CAPACITY UNDER WHICH THIS BID IS SIGNED (Attach proof of authority to sign this bid; e.g. resolution of directors, etc.) | | | |
| TOTAL NUMBER OF ITEMS OFFERED | | TOTAL BID PRICE (ALL INCLUSIVE) | |
| BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO: | | TECHNICAL INFORMATION MAY BE DIRECTED TO: | |
| DEPARTMENT/ PUBLIC ENTITY | RURAL DEVELOPMENT AND LAND REFORM | CONTACT PERSON | MS Xoliswa Ngcobo |
| CONTACT PERSON | AS NKUNA / NJ HLATSHWAYO | TELEPHONE NUMBER | 079 898 5236 |
| TELEPHONE NUMBER | (013) 754 8066/082 947 6304 | FACSIMILE NUMBER | |
| FACSIMILE NUMBER | | E-MAIL ADDRESS | Xoliswa.ngcobo@dalrrd.gov.za b |
| E-MAIL ADDRESS | Ankuna2@dalrrd.gov.za dominic.fundisi@dalrrd.gov.za | | |

PART B

TERMS AND CONDITIONS FOR BIDDING

| | | | | | | | | |
|---|--|--|--|--|---|--|--|--|
| 1. BID SUBMISSION: | | | | | | | | |
| <p>1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.</p> <p>1.2. ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED) OR ONLINE</p> <p>1.3. BIDDERS MUST REGISTER ON THE CENTRAL SUPPLIER DATABASE (CSD) TO UPLOAD MANDATORY INFORMATION NAMELY: (BUSINESS REGISTRATION/ DIRECTORSHIP/ MEMBERSHIP/IDENTITY NUMBERS; TAX COMPLIANCE STATUS; AND BANKING INFORMATION FOR VERIFICATION PURPOSES). B-BBEE CERTIFICATE OR SWORN AFFIDAVIT FOR B-BBEE MUST BE SUBMITTED TO BIDDING INSTITUTION.</p> <p>1.4. WHERE A BIDDER IS NOT REGISTERED ON THE CSD, MANDATORY INFORMATION NAMELY: (BUSINESS REGISTRATION/ DIRECTORSHIP/ MEMBERSHIP/IDENTITY NUMBERS; TAX COMPLIANCE STATUS MAY NOT BE SUBMITTED WITH THE BID DOCUMENTATION. B-BBEE CERTIFICATE OR SWORN AFFIDAVIT FOR B-BBEE MUST BE SUBMITTED TO BIDDING INSTITUTION.</p> <p>1.5. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2017, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER LEGISLATION OR SPECIAL CONDITIONS OF CONTRACT.</p> | | | | | | | | |
| 2. TAX COMPLIANCE REQUIREMENTS | | | | | | | | |
| <p>2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.</p> <p>2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.</p> <p>2.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA.</p> <p>2.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS TOGETHER WITH THE BID.</p> <p>2.5 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE PROOF OF TCS / PIN / CSD NUMBER.</p> <p>2.6 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.</p> | | | | | | | | |
| 3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS | | | | | | | | |
| <table style="width: 100%; border: none;"> <tr> <td style="width: 70%;">3.1. IS THE BIDDER A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?</td> <td style="text-align: right;"><input type="checkbox"/> YES <input type="checkbox"/> NO</td> </tr> <tr> <td>3.2. DOES THE BIDDER HAVE A BRANCH IN THE RSA?</td> <td style="text-align: right;"><input type="checkbox"/> YES <input type="checkbox"/> NO</td> </tr> <tr> <td>3.3. DOES THE BIDDER HAVE A PERMANENT ESTABLISHMENT IN THE RSA?</td> <td style="text-align: right;"><input type="checkbox"/> YES <input type="checkbox"/> NO</td> </tr> <tr> <td>3.4. DOES THE BIDDER HAVE ANY SOURCE OF INCOME IN THE RSA?</td> <td style="text-align: right;"><input type="checkbox"/> YES <input type="checkbox"/> NO</td> </tr> </table> <p>IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN, IT IS NOT A REQUIREMENT TO OBTAIN A TAX COMPLIANCE STATUS / TAX COMPLIANCE SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 ABOVE.</p> | 3.1. IS THE BIDDER A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? | <input type="checkbox"/> YES <input type="checkbox"/> NO | 3.2. DOES THE BIDDER HAVE A BRANCH IN THE RSA? | <input type="checkbox"/> YES <input type="checkbox"/> NO | 3.3. DOES THE BIDDER HAVE A PERMANENT ESTABLISHMENT IN THE RSA? | <input type="checkbox"/> YES <input type="checkbox"/> NO | 3.4. DOES THE BIDDER HAVE ANY SOURCE OF INCOME IN THE RSA? | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| 3.1. IS THE BIDDER A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)? | <input type="checkbox"/> YES <input type="checkbox"/> NO | | | | | | | |
| 3.2. DOES THE BIDDER HAVE A BRANCH IN THE RSA? | <input type="checkbox"/> YES <input type="checkbox"/> NO | | | | | | | |
| 3.3. DOES THE BIDDER HAVE A PERMANENT ESTABLISHMENT IN THE RSA? | <input type="checkbox"/> YES <input type="checkbox"/> NO | | | | | | | |
| 3.4. DOES THE BIDDER HAVE ANY SOURCE OF INCOME IN THE RSA? | <input type="checkbox"/> YES <input type="checkbox"/> NO | | | | | | | |

NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.

BIDDER'S DISCLOSURE

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

Bidder's declaration

- 2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest¹ in the enterprise, employed by the state?
- 2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

| | | |
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- 2.2 Do you, or any person connected with the bidder, have a relationship

¹ the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

with any person who is employed by the procuring institution?

2.2.1 If so, furnish particulars:

.....
.....

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract?

2.3.1 If so, furnish particulars:

.....
.....

I, _____ the _____ undersigned,
(name)..... in
submitting the accompanying bid, do hereby make the following
statements that I certify to be true and complete in every respect:

- 3.1 I have read and I understand the contents of this disclosure;
- 3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
- 3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium² will not be construed as collusive bidding.
- 3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring

² Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.

- 3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.

I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

| | |
|-----------|----------------|
| | |
| Signature | Date |
| | |
| Position | Name of bidder |

This preference form must form part of all bids invited. It contains general information and serves as a claim form for preference points for Broad-Based Black Economic Empowerment (B-BBEE) Status Level of Contribution

1.1 The following preference point systems are applicable to all bids:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2

- a) The value of this bid is estimated to ~~exceed~~/not exceed R50 000 000 (all applicable taxes included) and therefore the preference point system shall be applicable; or
- b) Either the 80/20 or 90/10 preference point system will be applicable to this tender (*delete whichever is not applicable for this tender*).

1.3 Points for this bid shall be awarded for:

- (a) Price; and
- (b) B-BBEE Status Level of Contributor.

1.4 The maximum points for this bid are allocated as follows:

| | |
|--|--|
| | |
| | |
| | |
| | |

1.5 Failure on the part of a bidder to submit proof of B-BBEE Status level of contributor together with the bid, will be interpreted to mean that preference points for B-BBEE status level of contribution are not claimed.

1.6 The purchaser reserves the right to require of a bidder, either before a bid is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the purchaser.

- (a) “**B BBEE**” means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (b) “**BBEE status level of contributor**” means the B-BBEE status of an entity in terms of a code of good practice on black economic empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (c) “**bid**” means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals;
- (d) “**Broad Based Black Economic Empowerment Act**” means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
“**EME**” means an Exempted Micro Enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (f) “**functionality**” means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.
- (g) “**prices**” includes all applicable taxes less all unconditional discounts;
- (h) “**p**” means:
B-BBEE Status level certificate issued by an authorized body or person;
A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;
Any other requirement prescribed in terms of the B-BBEE Act;
- (i) “**QSE**” means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (j) “**rand value**” means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;

3.1

A maximum of 80 or 90 points is allocated for price on the following basis:

$$= 80 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right) \quad \text{or} \quad = 90 \left(1 - \frac{P_t - P_{\min}}{P_{\min}} \right)$$

Where

- Ps = Points scored for price of bid under consideration
- Pt = Price of bid under consideration
- Pmin = Price of lowest acceptable bid

- 4.1 In terms of Regulation 6 (2) and 7 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

| 1 | 10 | 20 |
|---------------------------|----|----|
| 2 | 9 | 18 |
| 3 | 6 | 14 |
| 4 | 5 | 12 |
| 5 | 4 | 8 |
| 6 | 3 | 6 |
| 7 | 2 | 4 |
| 8 | 1 | 2 |
| Non-compliant contributor | 0 | 0 |

5.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution must complete the following:

6.1 B-BBEE Status Level of Contributor: . =(maximum of 10 or 20 points)
(Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 4.1 and must be substantiated by relevant proof of B-BBEE status level of contributor.

7.1 Will any portion of the contract be sub-contracted?

(Tick applicable box)

| | | | |
|-----|--------------------------|----|--------------------------|
| YES | <input type="checkbox"/> | NO | <input type="checkbox"/> |
|-----|--------------------------|----|--------------------------|

7.1.1 If yes, indicate:

- What percentage of the contract will be subcontracted.....%
- The name of the sub-contractor.....
- The B-BBEE status level of the sub-contractor.....
- Whether the sub-contractor is an EME or QSE

(Tick applicable box)

| | | | |
|-----|--------------------------|----|--------------------------|
| YES | <input type="checkbox"/> | NO | <input type="checkbox"/> |
|-----|--------------------------|----|--------------------------|

- Specify, by ticking the appropriate box, if subcontracting with an enterprise in terms of Preferential Procurement Regulations,2017:

| | ✓ | ✓ |
|---|---|---|
| Black people | | |
| Black people who are youth | | |
| Black people who are women | | |
| Black people with disabilities | | |
| Black people living in rural or underdeveloped areas or townships | | |
| Cooperative owned by black people | | |

| | | |
|--|--|--|
| Black people who are military veterans | | |
| Any EME | | |
| Any QSE | | |

8.

8.1 Name of company/firm:.....

8.2 VAT registration number:.....

8.3 Company registration number:.....

8.4 TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
 - ☐ One person business/sole propriety
 - ☐ Close corporation
 - ☐ Company
 - ☐ (Pty) Limited
- [TICK APPLICABLE BOX]

8.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....

.....

.....

.....

.....

8.6 COMPANY CLASSIFICATION

- ☐ Manufacturer
 - ☐ Supplier
 - ☐ Professional service provider
 - ☐ Other service providers, e.g. transporter, etc.
- [TICK APPLICABLE BOX]

8.7 Total number of years the company/firm has been in business:.....

8.8 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contributor indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- iv) If the B-BBEE status level of contributor has been claimed or obtained on a

fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –

- (a) disqualify the person from the bidding process;
- (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
- (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
- (d) recommend that the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
- (e) forward the matter for criminal prosecution.

WITNESSES

1.

2.

.....
SIGNATURE(S) OF BIDDERS(S)

DATE:

ADDRESS

.....

.....

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

- 1 This Standard Bidding Document must form part of all bids invited.
- 2 It serves as a declaration to be used by institutions in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- 3 The bid of any bidder may be disregarded if that bidder, or any of its directors have-
 - a. abused the institution's supply chain management system;
 - b. committed fraud or any other improper conduct in relation to such system; or
 - c. failed to perform on any previous contract.
- 4 **In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.**

| Item | Question | Yes | No |
|-------|--|---------------------------------|--------------------------------|
| 4.1 | Is the bidder or any of its directors listed on the National Treasury's database as companies or persons prohibited from doing business with the public sector? (Companies or persons who are listed on this database were informed in writing of this restriction by the National Treasury after the <i>audi alteram partem</i> rule was applied). | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 4.1.1 | If so, furnish particulars: | | |
| 4.2 | Is the bidder or any of its directors listed on the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004)? To access this Register enter the National Treasury's website, www.treasury.gov.za, click on the icon "Register for Tender Defaulters" or submit your written request for a hard copy of the Register to facsimile number (012) 3265445. | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 4.2.1 | If so, furnish particulars: | | |
| 4.3 | Was the bidder or any of its directors convicted by a court of law (including a court outside of the Republic of South Africa) for fraud or corruption during the past five years? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 4.3.1 | If so, furnish particulars: | | |
| 4.4 | Was any contract between the bidder and any organ of state terminated during the past five years on account of failure to perform on or comply with the contract? | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| 4.4.1 | If so, furnish particulars: | | |

CERTIFICATION

**I, THE UNDERSIGNED (FULL NAME).....
CERTIFY THAT THE INFORMATION FURNISHED ON THIS DECLARATION
FORM IS TRUE AND CORRECT.**

**I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT,
ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION
PROVE TO BE FALSE.**

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

Js365bW

CERTIFICATE OF INDEPENDENT BID DETERMINATION

- 1 This Standard Bidding Document (SBD) must form part of all bids/quotes¹ invited.
- 2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).² Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.
- 3 Treasury Regulation 16A9 prescribes that accounting officers and accounting authorities must take all reasonable steps to prevent abuse of the supply chain management system and authorizes accounting officers and accounting authorities to:
 - a. disregard the bid of any bidder if that bidder, or any of its directors have abused the institution's supply chain management system and or committed fraud or any other improper conduct in relation to such system.
 - b. cancel a contract awarded to a supplier of goods and services if the supplier committed any corrupt or fraudulent act during the bidding process or the execution of that contract.
- 4 This SBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.
- 5 In order to give effect to the above, the attached Certificate of Bid Determination (SBD 9) must be completed and submitted with the bid:

¹ Includes price quotations, advertised competitive bids, limited bids and proposals.

² Bid rigging (or collusive bidding) occurs when businesses, that would otherwise be expected to compete, secretly conspire to raise prices or lower the quality of goods and / or services for purchasers who wish to acquire goods and / or services through a bidding process. Bid rigging is, therefore, an agreement between competitors not to compete.

CERTIFICATE OF INDEPENDENT QUOTATION/PROPOSAL DETERMINATION

I, the undersigned, in submitting the accompanying quote:

(Quote Number and Description)

in response to the invitation for the quote made by:

(Name of Institution)

do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of: _____ that:

(Name of Bidder)

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign the bid, on behalf of the bidder;
5. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
 - (a) has been requested to submit a bid in response to this bid invitation;
 - (b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
 - (c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder

6. The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium³ will not be construed as collusive bidding.
7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
 - (a) prices;
 - (b) geographical area where product or service will be rendered (market allocation)
 - (c) methods, factors or formulas used to calculate prices;
 - (d) the intention or decision to submit or not to submit, a bid;
 - (e) the submission of a bid which does not meet the specifications and conditions of the bid; or
 - (f) bidding with the intention not to win the bid.
8. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
9. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.

³ Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

10. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

Js914w 2

PROJECT NAME: WAAIKRAAL HOUSE

CONTRACT NUMBER:

| ITEM NO. | PAYM REF | DESCRIPTION | QTY | Rate | Amount |
|---|----------------------|---|-----|------|--------|
| | SABS 1200A | <u>SECTION 1 : PRELIMINARY & GENERAL</u> | | | |
| 1,1 | 8,3 | <u>FIXED CHARGE AND VALUE-RELATED ITEMS</u> | | | |
| 1.1.1 | 8.3.1 | Contractual Requirements | 1 | | |
| 1.1.2 | 8.3.2 | Establish facilities on site: | | | |
| | 8.3.2.2 | a) Ablution & latrine facilities | | | |
| | | (i) at site office | 1 | | |
| | | (ii) at construction site | 1 | | |
| | | b) Water supplies, electric power and communications | | | |
| | | (i) water supplies | 1 | | |
| | | (ii) electrical power | 1 | | |
| | | (iv) Compilation and the keeping up to date of a Health and Safety file, which shall include all. | 1 | | |
| | | (v) Provision of Safety Gear as per OHS ACT | 1 | | |
| 1.1.3. | 8.3.3 | Other fixed charge obligations | | | |
| | | (a) Geotechnical investigation 1 housing unit | 1 | | |
| | | (b) Undertaking topographical survey and pegging for 1 House | 1 | | |
| 1.1.4. | 8.3.4 | Removal of site establishment | 1 | | |
| 1,2 | 8,4 | <u>TIME RELATED ITEMS</u> | | | |
| 1.2.1 | 8.4.1 | Contractual Requirements | 1,5 | | |
| 1.2.2 | 8.4.2.2 | Ablution facilities | | | |
| | | (a) at site office | 1,5 | | |
| 1.2.3 | | Water supplies, electric power and communications | | | |
| | | (a) water supplies | 1,5 | | |
| | | (b) electrical power | 1,5 | | |
| 1.2.4 | 8.4.5 | Other time-related obligations | | | |
| | | (b) Implementation of the Health and Safety Plan over the entire construction period. | 1,5 | | |
| 1.2.5 | | Provision of Community Liason Officer | | | |
| | | a) Compensation to CLO appointed from local community (Provisional Sum) | 2 | | |
| TOTAL SECTION 1 CARRIED TO SUMMARY | | | | | |

| ITEM NO. | DESCRIPTION | Unit | QTY | Rate | Amount |
|--|--|------|-----------|------|--------|
| | SECTION NO.2 | | | | |
| | SUPPLEMENTARY PREAMBLES | | | | |
| | Items, materials or methods to be used specified by trade names or catalogue numbers are only an indication of the quality required. Items, materials or other approved may be used with prior approval from the architect | | | | |
| 2.1 | EARTHWORKS (PROVISIONAL) | | | | |
| | SITE CLEARANCE ETC | | | | |
| | <u>Site Clearance</u> | | | | |
| 2.1.1 | Digging up and removing rubbish, debris, vegetation, hedges, shrubs, bush, etc and trees not exceeding 200mm girth | m2 | 83,00 | | |
| 2.1.2 | Stripping average 100mm thick layer of top soil and depositing material in prescribed stock piles on site | m2 | 83,00 | | |
| | REMOVAL OF TREES ETC | | | | |
| | <u>Cutting down and removing, grubbing up roots and filling in holes</u> | | | | |
| 2.1.3 | Tree exceeding 200mm and not exceeding 500mm girth | No | Rate only | | |
| 2.1.4 | Tree exceeding 500mm and not exceeding 1000mm girth | No | Rate only | | |
| 2.1.5 | Tree exceeding 1500mm and not exceeding 2000mm girth | No | 1,00 | | |
| | EXCAVATION, FILLING, ETC | | | | |
| | <u>Excavation in earth not exceeding 2m deep</u> | | | | |
| 2.1.6 | Reduced levels under floors | m3 | 30,00 | | |
| 2.1.7 | Trenches | m3 | 16,00 | | |
| | <u>Extra over trench and hole excavations in earth for excavation</u> | | | | |
| 2.1.9 | Soft rock | m3 | 9,20 | | |
| 2.1.10 | Hard rock | m3 | 4,60 | | |
| TOTAL SECTION 2 CARRIED FORWARD | | | | | |

| ITEM NO. | DESCRIPTION | Unit | QTY | Rate | Amount |
|--|---|------|--------|------|--------|
| TOTAL BROUGHT FORWARD | | | | | |
| 2.1.11 | <u>Extra over all excavations for carting away</u> Surplus material from excavations and / or stockpiles on site to a dumping site to be located by the contractor | m3 | 27,00 | | |
| 2.1.12 | <u>Risk of collapse</u> Allow for the risk of collapse to sides of excavation from ground level not exceeding 1,5 m deep. | m2 | 65,59 | | |
| 2.1.13 | Keeping excavations free of water: | | | | |
| 2.1.14 | Keeping excavations free of water by pumping and bailing. | Item | 1,00 | | |
| | FILLING, ETC: | | | | |
| 2.1.15 | <u>Earthfilling with material excavated and stockpiled on site, compacted to 93% Mod ASSHTO in 150mm layers</u> Under floors, steps, pavings, etc | m3 | 12,00 | | |
| | Backfill in trenches | m3 | 7,00 | | |
| | <u>Prescribed density tests on filling</u> | | | | |
| 2.1.16 | Modified AASHTO Density test | No | 3,00 | | |
| | SOIL POISONING | | | | |
| | <u>Soil insecticide in accordance with SANS 5859</u> | | | | |
| 2.1.17 | Under floors, pavings, etc. including forming and poisoning shallow furrows against foundation walls etc., filling in furrows and ramming. | m2 | 153,00 | | |
| TOTAL SECTION 2 CARRIED FORWARD | | | | | |

| ITEM NO. | DESCRIPTION | Unit | QTY | Rate | Amount |
|--|---|------|-------|------|--------|
| TOTAL BROUGHT FORWARD | | | | | |
| | CONCRETE, FORMWORK AND REINFORCEMENT (PROVISSIONAL) | | | | |
| | REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES | | | | |
| 2.2 | 25 MPa/19 mm concrete | | | | |
| 2.2.1 | Strip foundations | m3 | 6,83 | | |
| 2.2.3 | Surface beds cast on waterproofing | m3 | 6,01 | | |
| 2.2.4 | In aprons cast in panels | m3 | 3,00 | | |
| | TEST BLOCKS | | | | |
| 2.2.5 | Making and testing 150 x 150 x 150mm concrete strength test cube | No | 6,00 | | |
| | CONCRETE SUNDRIES | | | | |
| | <u>Finishing top surfaces of concrete to an evenly ribbed non-slip surface</u> | | | | |
| 2.2.6 | Surface beds, slabs, etc | m2 | 58,00 | | |
| | MOVEMENT JOINTS, ETC | | | | |
| | <u>Expansion joints with bitumen impregnated softboard between vertical concrete and brick surfaces</u> | | | | |
| 2.2.8 | 12 mm Joints not exceeding 300 mm high | m | 66,81 | | |
| | REINFORCEMENT | | | | |
| | <u>Mild steel reinforcement to structural concrete work</u> | | | | |
| 2.2.9 | 8mm Diameter bars. | t | 0,02 | | |
| | <u>High tensile steel reinforcement to structural concrete work</u> | | | | |
| 2.2.10 | 12mm Diameter bars. | t | 0,15 | | |
| | <u>Fabric reinforcement</u> | | | | |
| 2.2.11 | Type 193 fabric reinforcement in concrete surface beds | m2 | 60,00 | | |
| TOTAL SECTION 2 CARRIED FORWARD | | | | | |

| ITEM NO. | DESCRIPTION | Unit | QTY | | |
|--|--|------|--------|--|--|
| TOTAL BROUGHT FORWARD | | | | | |
| 2.3 | MASONRY SUPPLEMENTARY PREAMBLES <u>BLOCKWORK</u> <u>Concrete masonry units</u> Blocks are to be solid dense concrete masonry units having a compressive strength of 10Mpa Blockwork Blockwork shall comply with SANS 10145 "Concrete Masonry Construction" Surfaces to be plastered shall have joints raked out to a depth of at least 10mm to provide a key. Cavities of hollow walls shall be kept free of mortar droppings or other undesirable matter. Every second perpend of the bottom course of the external skin of hollow walls shall be left open as a weep hole Standard complementary blocks Descriptions of blockwork shall be deemed to include standard complementary blocks such as corner, three-quarter, half and quarter blocks required in the construction of corners, reveals, jambs, ends, etc to solid and hollow walls and for bonding as necessary SUPERSTRUCTURE Blockwork in class 2 Mortar | | | | |
| 2.3.1 | 160mm walls | m2 | 50,66 | | |
| 2.3.2 | 115mm wall. | m2 | 102,13 | | |
| 2.3.3 | 160mm walls above wall plate level | m2 | 11,88 | | |
| 2.3.4 | 160mm walls in beamfilling | m2 | 4,69 | | |
| | BLOCKWORK SUNDRIES | | | | |
| | <u>2,8mm Brick reinforcement</u> | | | | |
| 2.3.5 | 57mm 'Brickforce' into walls | m | 245,57 | | |
| 2.3.6 | 100mm 'Brickforce' into walls | m | 441,71 | | |
| | <u>Prestressed fabricated lintels</u> | | | | |
| 2.3.7 | 110 x 75 mm Lintels in lengths not exceeding 4m | m | 15,10 | | |
| | <u>Turning pieces</u> | | | | |
| 2.3.8 | Turning piece not exceeding 300mm wide | m | 3,50 | | |
| | <u>30 x 1.6mm Galvanised hoop iron ties, etc</u> | | | | |
| 2.3.9 | 30 x 1.6mm Galvanised hoop iron ties, etc, 3m long) | No | 18,00 | | |
| TOTAL SECTION 2 CARRIED FORWARD | | | | | |

| ITEM NO. | DESCRIPTION | Unit | QTY | | |
|--|---|------|-------|--|--|
| TOTAL BROUGHT FORWARD | | | | | |
| | <u>FIBRE-CEMENT WINDOW SILLS</u> | | | | |
| | <u>Natural grey sills in single lengths bedded in class 2 mortar including metal fixing lugs etc</u> | | | | |
| 2.3.10 | 15 x 150mm Wide sills set flat and slightly projecting | m | 10,00 | | |
| 2.4 | WATERPROOFING | | | | |
| | DAMPPROOFING OF WALLS AND FLOORS | | | | |
| | <u>One layer of 375 micron "Plastic Brikgrip DPC" embossed damp proof course</u> | | | | |
| 2.4.1 | In/ Under walls | m2 | 7,77 | | |
| | <u>One layer of 250 micron "Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"</u> | | | | |
| 2.4.2 | Under surface beds | m2 | 58,00 | | |
| | JOINT SEALANTS, ETC | | | | |
| | <u>Two-part grey polysulphide sealing compound including backing cord, bond breaker, primer, etc</u> | | | | |
| 2.4.4 | 12 x 20 mm In expansion joints between concrete floors and brickwork including raking out expansion joint filler as necessary | m | 66,81 | | |
| 2.5 | ROOF COVERINGS ETC | | | | |
| | For preambles see "Model Preambles for Trades" | | | | |
| | SUPPLEMENTARY PREAMBLES | | | | |
| | Straight cutting | | | | |
| | Descriptions of all roof coverings are deemed to include for all straight cutting | | | | |
| | PROFILED METAL SHEETING AND ACCESSORIES | | | | |
| | <u>0,47mm IBR profile sheeting with Chromadek finish on one side in colour "rain forest", fixed to timber purlins</u> | | | | |
| 2.5.1 | Roof coverings with 28 degrees pitch | m2 | 74,17 | | |
| 2.5.2 | Ridge cappings 375mm girth | m | 10,23 | | |
| TOTAL SECTION 2 CARRIED FORWARD | | | | | |

| ITEM NO. | DESCRIPTION | Unit | QTY | Rate | Amount |
|--|---|------|-------|------|--------|
| TOTAL BROUGHT FORWARD | | | | | |
| | ROOF AND WALL INSULATION | | | | |
| | <u>Multi-layered reinforced double-sided aluminium foil sheeting in accordance with SANS 1381-4 with a mass of not less than 293g/m² and a Class I fire rating in accordance with SANS 0177-3</u> | | | | |
| 2,5,3 | Insulation laid taut over purlins (at approximately 800mm centres) and fixed concurrent with roof covering, including taped laps and nylon straining wires | m2 | 64,04 | | |
| 2.6 | CARPENTRY AND JOINERY | | | | |
| | SUPPLEMENTARY PREAMBLES | | | | |
| | Particle board | | | | |
| | Particle board shall comply with the following specifications: | | | | |
| | a) SABS 1300 Particle board: exterior and flooring type | | | | |
| | b) SABS 1301 Particle board: interior type | | | | |
| | JOINERY | | | | |
| | Descriptions of frames shall be deemed to include frames, transomes, mullions, rails, etc | | | | |
| | Descriptions of hardwood joinery shall be deemed to include pelleting of bolt holes | | | | |
| | Fixing | | | | |
| | Items described as "nailed" shall be deemed to be fixed with hardened steel nails or shot pins to brickwork or concrete | | | | |
| | <u>Decorative laminate finish</u> | | | | |
| | <u>Laminate finish shall be glued under pressure.</u> | | | | |
| | <u>Edge strips shall be butt jointed at junctions with adjacent similar finish</u> | | | | |
| | ROOFS, ETC | | | | |
| | <u>Sawn softwood</u> | | | | |
| 2.6.1 | 50 x 76mm Purlins | m | 81,84 | | |
| 2.6.2 | 38 x 114mm Wall plates | m | 20,64 | | |
| 2.6.3 | Fink Roof Truss or simillar (6,7m span) | No | 10,00 | | |
| | <u>Sundries</u> | | | | |
| 2.6.4 | Two coats creosote on sawn timbers | m² | 5,40 | | |
| TOTAL SECTION 2 CARRIED FORWARD | | | | | |

| ITEM NO. | DESCRIPTION | Unit | QTY | Rate | Amount |
|--|--|------|-------|------|--------|
| TOTAL BROUGHT FORWARD | | | | | |
| | EAVES, VERGES, ETC | | | | |
| | <u>Everite medium density plain nutec-cement</u> | | | | |
| 2.6.5 | 12 x 225mm Fascia with plastic H-profile joint strips, screwed timber with brass screws | m | 20,46 | | |
| 2.6.6 | 275 x 80mm L-shaped bargeboard with plastic H-profile joint strips, screwed to timber with brass screws | m | 14,50 | | |
| | SKIRTINGS | | | | |
| 2.6.7 | 19 x 76 mm Rounded skirting plugged to walls including 19 mm quadrant bead planted on including mitres, etc. | m | 81,06 | | |
| | DOORS ETC. | | | | |
| | <u>Wrought white oak doors hung to timber frames</u> | | | | |
| 2,6,8 | 40mm Solid hardwood door 813 x 2032mm high, formed of 40 x 110mm top rail and stiles, 20 x 150mm bottom ledge and 20 x 75mm tongued, grooved and v-jointed both sides vertical boarding fixed in and including grooves in styles and top rail.(D1) | No | 2,00 | | |
| 2,6,9 | 40mm timber hollow core doors with 3.2 tempered hard board facings and tow h/wood edge strips hung to steel frames door size 813 x 2032mm high. (D2) | No | 4,00 | | |
| 2,7 | SUPPLEMENTARY PREAMBLES | | | | |
| | Descriptions: | | | | |
| | Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins or shot pinned to brickwork or concrete | | | | |
| | Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres, and where described as "bolted" the bolts have been given elsewhere | | | | |
| TOTAL SECTION 2 CARRIED FORWARD | | | | | |

| ITEM NO. | DESCRIPTION | Unit | QTY | Rate | Amount |
|--|--|------|--------------|------|--------|
| TOTAL BROUGHT FORWARD | | | | | |
| | CEILINGS ETC | | | | |
| | NAILED UP CEILINGS | | | | |
| | <u>4,6mm Fibre-cement plain ceiling boards with 4 x 50mm cover strips over joints</u> | | | | |
| 2,7,1 | Ceilings including 38 x 38mm sawn softwood bandering at 500mm centres and cross bandering at 500mm centres | m2 | 58,82 | | |
| | <u>Gypsum plasterboard cornices</u> | | | | |
| 2,7,2 | 50mm Coved cornice | m | 81,06 | | |
| 2,8 | IRONMONGERY | | | | |
| | PRICES | | | | |
| | Prices are to include for fixing to hardwood, softwood or pressed steel door frames | | | | |
| | The following items are for taking delivery, unpacking and fixing only. The cost to supply the items is covered elsewhere in a Prime Cost Amount | | | | |
| | HINGES, BOLTS, ETC | | | | |
| | <u>SABS Approved</u> | | | | |
| 2,8,1 | 100mm steel hinge with double steel washers | | | | |
| | LOCKS, ETC | | | | |
| | <u>SABS Approved</u> | | | | |
| 2,8,2 | Three lever mortice upright lockset with satin chrome furniture | No | 2,00 | | |
| 2,8,3 | Two lever mortice upright lockset with satin chrome furniture | No | 4,00 | | |
| | BATHROOM FITTINGS | | | | |
| 2,8,4 | Chromium plated locking towel rail 915mm long including end brackets | No | 1,00 | | |
| TOTAL SECTION 2 CARRIED FORWARD | | | | | |

| ITEM NO. | DESCRIPTION | Unit | QTY | Rate | Amount |
|--|---|------|--------|------|--------|
| TOTAL BROUGHT FORWARD | | | | | |
| 2.9 | METALWORK | | | | |
| | PRESSED STEEL DOOR FRAMES | | | | |
| | <u>1,2mm galvanised steel Double rebated frames suitable for half brick walls</u> | | | | |
| 2.9.1 | Frame for door 813 x 2 032mm high | No | 4,00 | | |
| | <u>1,2mm galvanised steel Double rebated frames suitable for one brick walls</u> | | | | |
| 2.9.2 | Frame for door 813 x 2 134mm high | No | 2,00 | | |
| | STEEL WINDOWS, DOORS, ETC | | | | |
| | <u>Galvanised steel residential windows with heavy duty solid brass ironmongery, including silicon sealant to all sides of window</u> | | | | |
| 2.9.3 | Window Type ND511F | No | 1,00 | | |
| 2.9.4 | Window Type ND54F | No | 4,00 | | |
| 2.9.5 | Window Type NE1 | No | 1,00 | | |
| 2.9.6 | Window Type TD75 | No | 1,00 | | |
| 2.10 | PLASTERING SCREEDS, ETC: | | | | |
| | <u>Cement sand screeds on concrete</u> | | | | |
| 2,10,1 | 25 mm Thick on floors | m2 | 58,82 | | |
| | INTERNAL PLASTER | | | | |
| | <u>Cement plaster steel trowelled, on brickwork to a smooth surface with a steel trowel</u> | | | | |
| 2,10,2 | On walls | m2 | 137,28 | | |
| 2,10,3 | On walls in narrow widths (Reveals) | m2 | 5,50 | | |
| | EXTERNAL PLASTER | | | | |
| | <u>Cement plaster steel trowelled, on brickwork to a smooth surface with a steel trowel</u> | | | | |
| 2,10,2 | On walls | m2 | 71,08 | | |
| 2,11 | TILING WALL TILING | | | | |
| | <u>200x 200 x 5 mm thick first class white glazed ceramic tiles fixed with approved adhesive to plaster (plaster elsewhere)</u> | | | | |
| 2,11,1 | To walls. | m2 | 13,31 | | |
| 2,11,3 | On splash back | m2 | 1,17 | | |
| TOTAL SECTION 2 CARRIED FORWARD | | | | | |

| ITEM NO. | DESCRIPTION | Unit | QTY | Rate | Amount |
|--|--|------|------------------|------|--------|
| TOTAL BROUGHT FORWARD | | | | | |
| | FLOOR TILING <u>300 X 300 X 8mm Thick Ceramic tiles laid to approved patters and bedded to manufacturer's specifications including tinted epoxy grouting</u> | | | | |
| 2,11,4 | On floors | m2 | 58,82 | | |
| | TOILET ROLL HOLDERS, ETC. | | | | |
| 2,11,5 | Single soap dish size 150 x 150 mm (white) | No | 1,00 | | |
| 2,12 | PLUMBING AND DRAINAGE (PROVISIONAL) | | | | |
| | RAINWATER DISPOSAL <u>0,6mm Galvanised sheet steel gutters and rainwater pipes with powder coated finish on outside</u> | | | | |
| 2,12,1 | 127 x 85mm Eaves gutters | m | Rate only | | |
| 2,12,2 | Extra for stopped end | No | Rate only | | |
| 2,12,3 | Extra over gutter for outlet for 200mm pipe | No | Rate only | | |
| 2,12,4 | 110 x 110mm Rainwater pipes | m | Rate only | | |
| 2,12,5 | Extra for bend | No | Rate only | | |
| 2,12,6 | Extra for socket | No | Rate only | | |
| | SANITARY FITTINGS | | | | |
| | <u>SABS Approved</u> | | | | |
| 2,12,7 | 560 x 405mm wash hand basin on brackets | No | Rate Only | | |
| 2,12,8 | 1160 x 460mm Double end Bowl stainless steel sinc fixed to wall complete with one tap. | No | Rate Only | | |
| 2,12,9 | Low level pan, p-trap with matching 9 litre low level white valveless WC suite comprising white vitreous china symphonic fitting, ball valve and matching flush pipe and heavy duty white plastic seat and lid | No | Rate Only | | |
| 2,12,10 | 1700 x 750mm built in bath with waste outlet, overflow grating with coupling and pair of handles, bedded in position | No | Rate Only | | |
| | WASTE UNIONS | | | | |
| 2,12,11 | 32mm Basin waste union, plug and chain. | No | Rate Only | | |
| 2,12,12 | 40mm Bath waste union, plug and chain. | No | Rate Only | | |
| TOTAL SECTION 2 CARRIED FORWARD | | | | | |

| ITEM NO. | DESCRIPTION | Unit | QTY | Rate | |
|--|---|------|-----------|------|--|
| TOTAL BROUGHT FORWARD | | | | | |
| | TRAPS, ETC. | | | | |
| | <u>SABS Approved</u> | | | | |
| 2,12,13 | 38mm uPVC Reseal combination "P" or "S" trap. | No | Rate Only | | |
| 2,12,14 | 32mm pvc bottle trap with 342 tailpipe, cap nut and wall flange | No | Rate Only | | |
| | TAPS, VALVES, ETC | | | | |
| | <u>SABS Approved</u> | | | | |
| 2,12,15 | 22 mm 1003/125 RB fullway gate valve | No | Rate Only | | |
| 2,12,16 | 15 mm 128 CP underwall pattern stopcock | No | Rate Only | | |
| 2,12,17 | 22mm 128CP underwall pattern stopcock | No | Rate Only | | |
| 2,12,18 | 15 mm CP ball-o-stop valve | No | Rate Only | | |
| 2,12,19 | 20mm CP ball-o-stop valve | No | Rate Only | | |
| 2,12,20 | 15mm chrome finished basin mixer | No | Rate Only | | |
| 2,12,21 | 15mm chrome finished sink mixer | No | Rate Only | | |
| 2,12,22 | 15mm chrome finished bath mixer with hand shower | No | Rate Only | | |
| | SANITARY PLUMBING | | | | |
| | <u>uPVC pipes:</u> | | | | |
| 2.12.23 | 50mm Pipes. | m | Rate Only | | |
| 2.12.24 | 50mm Pipes laid in and including trenches not exceeding 1m deep under surface beds | m | Rate Only | | |
| 2.12.25 | 110mm Pipes. | m | Rate Only | | |
| | <u>Extra over uPVC pipes for fittings:</u> | | | | |
| 2.12.26 | 50mm Bend | No | Rate Only | | |
| 2.12.27 | 50mm Access bend. | No | Rate Only | | |
| 2.12.28 | 110mm Access bend. | No | Rate Only | | |
| | WATER SUPPLIES | | | | |
| | <u>Class O copper pipes</u> | | | | |
| 2.12.29 | 15 mm Pipes | m | Rate Only | | |
| 2.12.30 | 22 mm Pipes | m | Rate Only | | |
| | Extra over class 0 copper pipes for capillary fittings | | | | |
| 2.12.31 | 15 mm Fittings | No | Rate Only | | |
| 2.12.32 | 22 mm Fittings | No | Rate Only | | |
| TOTAL SECTION 2 CARRIED FORWARD | | | | | |

| ITEM NO. | DESCRIPTION | Unit | QTY | Rate | Amount |
|--|--|------|-----------|------|--------|
| TOTAL BROUGHT FORWARD | | | | | |
| | Extra over class 0 copper pipes for conex compression fittings | | | | |
| 2.12.33 | 15 mm Fittings | No | Rate Only | | |
| 2.12.34 | 22mm fittings | No | Rate Only | | |
| | Copper overflow and service pipes | | | | |
| 2.12.35 | 15 mm Service pipe 350 mm girth | No | Rate Only | | |
| | TESTING | | | | |
| 2.12.36 | Provide all necessary apparatus water, etc. for testing all plumbing work installations on 35 houses as required by Project Manager | Item | Rate Only | | |
| | WATER CONNECTION | | | | |
| 2.12.37 | Allow for a 40mm dia. Water connection comprising a stopcock onto the site boundary of 35 stands to the approval of the principal agent | Item | Rate Only | | |
| | SOLAR WATER HEATER | | | | |
| | <u>SABS Approved</u> | | | | |
| 2.12.38 | 150L Low pressure roof mounted solar water geyser including all necessary fittings | No | 1,00 | | |
| 2,13 | GLAZING | | | | |
| | Glazing to steel sashes fixed with approved putty: | | | | |
| 2.13.1 | 4 mm float clear glass in panes exceeding 0,5 and not exceeding 2 m2. | m2 | 1,74 | | |
| 2.13.2 | 4 mm float clear glass in panes exceeding 2 and not exceeding 2 m2. | m2 | 11,36 | | |
| 2.13.3 | 4 mm float obscure glass in panes exceeding 0,1 and not exceeding 0,5 m2. | m2 | 0,28 | | |
| | MIRRORS | | | | |
| | 6mm Silvered float glass mirrors with polished edges holed for and fixed with 4No chromium plated dome capped mirror screws with rubber buffers to plugs in brickwork or concrete: | | | | |
| 2.13.4 | Mirror 450 x 600mmigh with four screws | No | 1,00 | | |
| TOTAL SECTION 2 CARRIED FORWARD | | | | | |

| ITEM NO. | DESCRIPTION | Unit | QTY | Rate | Amount |
|------------------------------------|---|------|--------|------|--------|
| TOTAL BROUGHT FORWARD | | | | | |
| | BILL NO. 14 | | | | |
| 2,14 | PAINTING | | | | |
| | PAINTWORK, ETC TO NEW WORK | | | | |
| | ON FLOATED PLASTER | | | | |
| | <u>One coat alkaline resistant primer, one coat Merit universal undercoat and two velvagio broken white paint</u> | | | | |
| 2.14.1 | On internal walls | m2 | 136,56 | | |
| 2,14.2 | On external wall | m2 | 78,00 | | |
| | <u>Prepare, stop, priming nail heads with zinc chromate primer,</u> | | | | |
| | <u>apply one coat universal under coat and two coats of acrylic emulsion paint</u> | | | | |
| 2.14.2 | On ceilings | m2 | 58,82 | | |
| | ON FIBRE-CEMENT | | | | |
| | <u>One coat plaster primer and two coats super acrylic emulsion paint</u> | | | | |
| 2.14.3 | On facias & bargeboards | m2 | 8,59 | | |
| | ON METAL | | | | |
| | <u>Degrease, one coat galvogrip primer, one undercoat and two coats high gloss enamel paint on steel:</u> | | | | |
| 2.14.4 | On gutters and down pipes | m2 | 6,66 | | |
| | ON WOOD | | | | |
| | <u>Sand down and apply three coats polyurathane varnish on</u> | | | | |
| 2.14.5 | On doors (Outside) | m2 | 3,78 | | |
| 2.14.6 | Skirtings, etc. not exceeding 150 mm girth. | m | 81,06 | | |
| 2.15 | Marble slab for Kitchen sink- 35 houses | No | 1,00 | | |
| 2.16 | Door weather strip | No | 1,00 | | |
| TOTAL SECTION 2 CARRIED TO SUMMARY | | | | | |

| ITEM | | | Unit | Qty | Rate | Amount |
|-------|---|---------|------|-----|------|--------|
| | SECTION 3- ELECTRICAL | | | | | |
| 3,10 | Refer to Drawing: Electrical layouts | | | | | |
| 3,1,1 | <u>PRELIMINARIES AND GENERAL</u> | | | | | |
| | <u>LOW VOLTAGE DISTRIBUTION</u> | | | | | |
| | <u>DISTRIBUTION BOARDS</u> | | | | | |
| | Specified equipment installed and connected, prewired main busbars of HCHD copper to match main switch rating, all metal work, frame (where required), chassis, panel, doors painted in the specified colour, neutral and earth bars, busbars for earth leakage relays and for sub-section as detailed, legend cards, gland plates, etc, as per specifications, including connections, terminating, testing and commissioning | | | | | |
| | Surface Mounted DB-4.7 : | | | | | |
| 3,1,2 | Pre-populated 12-way distribution board | Supply | No | 1 | | |
| 3,1,3 | | Install | No | 1 | | |
| | <u>CABLES</u> | | | | | |
| | Supply and installation of 600/1000V PVC/PVC/SWA/PVC/Cu cable in shaft, sleeve, trench, on cable rack or on surface, including strapping or clamping, supports, etc. | | | | | |
| | 400/1000V Aluminium Self supporting Aerial Bundle Cable + N/E insulated support conductors including mounting brackets for strain fittings, mounting brackets for suspension fittings etc. | | | | | |
| 3,1,4 | 1.5 mm ² | Supply | m | 8 | | |
| 3,1,5 | | Install | m | 8 | | |
| | <u>EARTH CONDUCTORS</u> | | | | | |
| | Supply and installation of copper earth conductor in trench or sleeve, on racking, steelwork or | | | | | |
| 3,1,6 | 2.5 mm ² Bare copper conductor | Supply | m | 20 | | |
| 3,1,7 | | Install | m | 20 | | |
| | <u>EARTH TERMINATIONS</u> | | | | | |
| | Terminate and connect earth conductor including lug, bolt, nut, etc. | | | | | |
| 3,1,8 | 2.5 mm ² Bare copper conductor | Supply | m | 8 | | |
| 3,1,9 | | Install | m | 8 | | |

| | |
|---------------------------------|--|
| TOTAL SECTION 5 CARRIED FORWARD | |
|---------------------------------|--|

| ITEM NO. | DESCRIPTION | Unit | QTY | Rate | Amount |
|--|---|-------------------|----------|----------|--------|
| TOTAL BROUGHT FORWARD | | | | | |
| | <u>TESTING AND COMMISSIONING</u> | | | | |
| 3,1,10 3,1,11 | Testing and commissioning of the entire electrical work contained in this Bill. Bill No. 2 | Sum | 1 | | |
| | Refer to Drawing: Power Layout: | | | | |
| 3,20 | <u>SMALL POWER INSTALLATION</u> | | | | |
| | <u>CONDUIT</u> | | | | |
| | Supply and installation of SABS approved PVC conduit complete with bends, joints, adaptors, couplings, saddles, cutting, etc. | | | | |
| 3,2,1 3,2,2 | 20mm Conduit | Supply Install | m m | 60 60 | |
| 3,2,3 3,2,4 | 25mm Conduit | Supply Install | m m | 15 15 | |
| | Supply and installation of galvanised steel conduit complete with bends, joints, adaptors, couplings, saddles, cutting, etc. | | | | |
| 3,2,5 3,2,6 | 20mm Galvanised conduit | Supply Install | m m | 6 16 | |
| | Supply and installation of surface or flush mounted conduit boxes including fixing to conduit with necessary locknuts, adaptors, bushes, etc. | | | | |
| | <u>CONDUIT BOXES</u> | | | | |
| 3,2,7 3,2,8 | 100 x 100 x 50mm Outlet box | Supply Install | No No | 6 6 | |
| 3,2,9 3,2,10 | 60mm Round outlet box | Supply Install | No No | 4 4 | |
| 3,2,11 3,2,12 | 60mm Diameter cover plate | Supply Install | No No | 4 4 | |
| 3,2,13 3,2,14 | 100 x 50 Blank cover plates | Supply Install | No No | 1 1 | |
| 3,2,15 3,2,16 | Draw wires drawn into conduit | Supply Install | m m | 60 60 | |
| TOTAL SECTION 5 CARRIED FORWARD | | | | | |

| ITEM NO. | DESCRIPTION | Unit | QTY | Rate | Amount |
|--|--|---------|-----|------|--------|
| TOTAL BROUGHT FORWARD | | | | | |
| | <u>FITTINGS AND ACCESSORIES</u> | | | | |
| | Supply and installation of power outlets and accessories complete with all necessary screws, cover plates, labelling, cradles, including all holes, drilling, etc. | | | | |
| 3,2,17 | 16A, 3-Pin flush mounted switched socket outlet, [double] mounted on brickwork / floor duct | Supply | No | 6 | |
| 3,2,18 | | Install | No | 6 | |
| 3,2,19 | 20A double pole isolator c/w box | Supply | No | 1 | |
| 3,2,20 | | Install | No | 1 | |
| | <u>CONDUCTORS</u> | | | | |
| | Supply and installation of 600/1000V PVC insulated copper conductors into conduit, trunking or powerskirting, including conductor identification labels, terminating, etc. | | | | |
| 3,2,21 | 2.5 mm ² conductor | Supply | m | 0 | |
| 3,2,22 | | Install | m | 0 | |
| 3,2,23 | 4 mm ² conductor | Supply | m | 0 | |
| 3,2,24 | | Install | m | 0 | |
| | Supply and installation of bare copper earth conductor into conduit, trunking, etc. | | | | |
| 3,2,25 | 2.5 mm ² conductor | Supply | m | 60 | |
| 3,2,26 | | Install | m | 60 | |
| 3,2,27 | 1.5 mm ² conductor | Supply | m | 0 | |
| 3,2,28 | | Install | m | 0 | |
| | <u>APPLIANCE CONNECTIONS</u> | | | | |
| | Supply and installation of flexible steel connections complete with adaptors, locknuts, bushes, labeling, etc. not exceeding 2 meters or approved termination kit | | | | |
| 3,2,29 | Geyser | Install | No | 0 | |
| 3,2,30 | 600 x 600 x 150 Deep flush draw-boxes with timber backing and lockable doors | Supply | No | 0 | |
| 3,2,31 | | Install | No | 0 | |
| | <u>EARTHING AND BONDING</u> | | | | |
| | Allow for earthing, bonding and Lightning protection of the entire installation as required by the Code of Practice | | | | |
| 3,2,32 | | No | 1 | | |
| TOTAL SECTION 5 CARRIED FORWARD | | | | | |

| ITEM NO. | DESCRIPTION | Unit | QTY | Rate | Amount |
|---|---|---------|-----|------|--------|
| TOTAL BROUGHT FORWARD | | | | | |
| | <u>TESTING AND COMMISSIONING</u> | | | | |
| 3,2,33 | Testing and commissioning of the entire electrical installation contained in this Bill. | No | 1 | | |
| 13,3,0 | Bill No. 3 Refer to Drawing: Lighting Layout | | | | |
| | <u>LIGHTING INSTALLATION</u> | | | | |
| | <u>CONDUIT BOXES</u> | | | | |
| | Supply and installation of surface or flush mounted conduit boxes including fixing to conduit with necessary locknuts, adaptors, bushes, etc. | | | | |
| 3,3,1 | 60mm Round outlet box | Supply | No | 4 | |
| 3,3,2 | | Install | No | 4 | |
| 3,3,3 | 100 x 100 x 50mm Outlet box | Supply | No | 1 | |
| 3,3,4 | | Install | No | 1 | |
| | <u>LUMINAIRES</u> | | | | |
| | The supply & installation of light fittings, recessed or surface mounted to ceiling, onto walls or floor mounted. | | | | |
| 3,3,5 | Type A | Supply | No | 7 | |
| 3,3,6 | LED Lighting Inside of house | Install | No | 7 | |
| 3,3,7 | Type B1 | | No | 3 | |
| 3,3,8 | Wall mounted round bulkhead fitting LED outside | | No | 3 | |
| | <u>LIGHT SWITCHES</u> | | | | |
| | [Clipsal Series 2000] | | | | |
| | Supply and installation of light switches, complete with all necessary connections, labelling, screws, cover plates, etc. | | | | |
| 3,3,9 | 16A one lever one-way flush mounted | Supply | No | 3 | |
| 3,3,10 | light switch | Install | No | 3 | |
| 3,3,11 | 16A Two lever one-way flush mounted | Supply | No | 3 | |
| 3,3,12 | light switch | Install | No | 3 | |
| | <u>TESTING AND COMMISSIONING</u> | | | | |
| 3,3,13 | Testing and commissioning of the entire lighting installation contained in this Bill. | Sum | Lot | | |
| TOTAL SECTION 3 CARRIED TO SUMMARY | | | | | |

| ITEM | DESCRIPTION | UNIT | QTY | RATE | AMOUNT |
|---|--|------|-----|------|--------|
| | SECTION 4 | | | | |
| | SUPPLY AND INSTALL OFFGRID PHOTOVOLTAIC POWER | | | | |
| | <u>PHOTOVOLTAIC SOLAR POWER MODULE MOUNTED ON ROOF STRUCTURE</u> | | | | |
| 4,1 | 330W Sola PV Panel | No | 9 | | |
| 4,3 | ECO Mounting Rail 41x41x6m | No | 4 | | |
| 4,4 | ECO Roof Hook | No | 20 | | |
| 4,5 | ECO Mounting clip | No | 40 | | |
| | <u>CONTROLS, INVENTERS ETC</u> | | | | |
| 4,6 | Inverter Growatt SPF5000ES | No | 1 | | |
| 4,8 | MPPT Solar Charge Controller | No | 1 | | |
| 4,9 | Special wall mounted electronic enclosure box 1000 x 1000 x 400mm with door and lock | No | 1 | | |
| 4,10 | DC String Combiner box LV 2 String | No | 1 | | |
| 4,11 | Aluminium angle structures | No | 1 | | |
| | <u>POWER STORAGE AND BACKUP</u> | | | | |
| 4,12 | Battery R100 @nd LIFE REV OV 5,1kW with 4,8kW useable | No | 1 | | |
| 4,13 | Fuse disconnecter & 100A fuses | No | 1 | | |
| 4,14 | Battery cables | m | 1 | | |
| 4,15 | BMS communication cables | m | 1 | | |
| 4,16 | AC DB | No | 1 | | |
| | <u>CABLES</u> | | | | |
| 4,17 | MC4 Connectors | No | 2 | | |
| 4,18 | Solar wire 6mm | m | 25 | | |
| 4,19 | Twin flex wire 6mm | m | 10 | | |
| | <u>CONDUITS</u> | | | | |
| 4,20 | Trunking 40mm x 40mm/ 25mm conduit | No | 4 | | |
| 4,21 | <u>SUNDRIES</u> | | | | |
| | Consumnables | Sum | 1 | | |
| 4,22 | Installation & Commissioning | Sum | 1 | | |
| 4,23 | Certificate of Compliance AC DB | Sum | 1 | | |
| TOTAL SECTION 4 CARRIED TO SUMMARY | | | | | |

| SUMMARY | |
|--------------------------------------|--------------|
| Section | Total amount |
| SECTION 1 - PRELIMINARY AND GENERAL | |
| SECTION 2 - BUILDING WORKS 35 HOUSES | |
| SECTION 3 - ELECTRICITY | |
| SECTION 4 - SOLAR POWER SYSTEM | |
| SUB-TOTAL 1 | |
| ADD 5% CONTIGENCIES | |
| SUB-TOTAL 2 | |
| ADD 15% VAT | |
| TOTAL AMOUNT | |

The primary objective of DALRRD is to construction of one house in Waaikraal under Emakhazeni Local Municipality, in Nkangala District. Generally, the work required for this contract is to establish a three bedroom house with basic services.

The project infrastructure would be in the form of construction of the house unit and works comprises of the following:

- Site establishment and Site clearance
- Grub and remove rubble
- Cut and remove trees
- Geotechnical investigations
- Earthworks
- Concrete, formwork and reinforcement
- Building works (Masonry and waterproofing)
- Carpentry and Joinery
- Truss connection and Roof covering
- Ironmongery
- Metalwork
- Finishes
- Electricity connection
- Installation of solar power system
- Issue CoC for electrical works

The approximate estimated quantities of each type of work to be carried out are listed in the bill of quantities bound in this document. The contractor will carry out all construction works required to commission the house as specified in the bid document.

| | | | | | |
|------------|-----------|-----------|----------|-----------|-----------|
| | | | | | |
| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

INDEX

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

The primary objective of DALRRD is to construction of one house in Waaikraal under Emakhazeni Local Municipality, in Nkangala District. Generally, the work required for this contract is to establish a three bedroom house with basic services.

The project infrastructure would be in the form of construction of the house unit and works comprises of the following:

- Site establishment and Site clearance
- Grub and remove rubble
- Cut and remove trees
- Geotechnical investigations
- Earthworks
- Concrete, formwork and reinforcement
- Building works (Masonry and waterproofing)
- Carpentry and Joinery
- Truss connection and Roof covering
- Ironmongery
- Metalwork
- Finishes
- Electricity connection
- Installation of solar power system
- Issue CoC for electrical works

The approximate estimated quantities of each type of work to be carried out are listed in the bill of quantities bound in this document. The contractor will carry out all construction works required to commission the storage shed as specified in the bid document.

| | | | | | |
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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

The coordinates for the site are as follows:
GPS Coordinates:

Incidental intrusion into private property shall not be permitted without the owner's written authority. Any such agreement reached with a private landowner (occupier) shall include the provision that any material or equipment on that site shall remain the exclusive property of the Employer in terms of the contract.

The coordinates for the site are as follows:
GPS Coordinates:

The contractor shall be responsible for the maintenance and re-instatement of damage caused by him or his agents / deliveries during the construction activities. No damage to flora or fauna located outside the limits of the site will be permitted in this contract.

The contractor should take cognisance of the aforementioned items concerning the environment and allow for any costs in his Tender under the relevant section in the Bill of Quantities

| | | | | | |
|---|--|--|---|--|--|
| <div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 5px;"></div> Contractor | <div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 5px;"></div> Witness 1 | <div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 5px;"></div> Witness 2 | <div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 5px;"></div> Employer | <div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 5px;"></div> Witness 1 | <div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 5px;"></div> Witness 2 |
|---|--|--|---|--|--|

Employer's objectives

The employer's objectives are to appoint the Contractor for the construction of one house in Waaikraal under Emakhazeni Local Municipality, in Nkangala District in the Mpumalanga province.

The works to be carried out under this contract comprise of the construction of one house in Waaikraal under Emakhazeni Local Municipality, in Nkangala District in the Mpumalanga province.

The contractor shall also supply and install all the materials outlined in the bill of quantity for the completion of the project.

The works shall comprise of:

- a) : Clear, stripped and grub all plant materials, trees root and topsoil of existing formation on designated site where the new development must take place;
- b) : Conduct survey to facilitate runoff planning, bulk earthwork and structure elevation using dumpy level or Total Station;
- c) and assessment reports for the Engineer done by a Professional Registered Geotechnical Engineer;
- d) inclusive of all the earthworks, concrete works, building works, waterproofing, truss connection and roof covering, carpentry and joinery, ironmongery, metalwork, finishes and associated sundries;
- e) : Solar PV panels, Solar battery, charge controller and inverter;
- f) Installation and providing a certificate of compliance for inside the house

The description of the works is not necessarily complete and shall not limit the work to be carried out by the Contractor in this contract. Approximate quantities of each type of work are given in the schedule of quantities.

The above works in entirety must be completed within the period of . It is therefore the contractor's responsibility to ensure that this will be achieved, failing which penalties will be charged at a rate according to latest document from DPW for day which the contractor falls behind, will be charged until such time that works are completed in full.

| | | | | | |
|------------|-----------|-----------|----------|-----------|-----------|
| | | | | | |
| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

The project is located in Waaikraal in Emakhazeni Local Municipality, Nkangala District in the Mpumalanga Province. The locality map is attached as Annexure B.

GPS Coordinates:

Contractor's offices, house, latrines, barricading of Works shall be located in an approved position and subject to the approval of all authorities concerned. Safety & Security of the contractor's temporary works shall be to his own discretion. The safety of the Employer and Employers representatives will also be the responsibility of the Main Contractor. All reasonable steps should be taken to ensure the safety of all persons on site.

| | | | | | |
|------------|-----------|-----------|----------|-----------|-----------|
| | | | | | |
| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

The standard specifications on which this contract is based are the SANS Standardised Specifications for Civil Engineering Works and the Conservation of Agricultural Resources Act (CARA) 43 of 1983.

The following SANS specifications are also referred to in this document and the Contractor is advised to obtain them from Standards South Africa (a division of SABS) in Pretoria.

| | | |
|----------------------|---|-----------------------------------|
| SABS 1200 A | - | General |
| SABS 1200 AA (4) | - | Site preparations & establishment |
| SABS 1200 AA (5.1.1) | - | Setting out of works |
| SABS 1200 C | - | Site Clearance (amended 1982) |
| SABS 1200 DA | - | Earthworks (Small Works) |
| SABS 1200 DM | - | Earth works subgrade |
| SABS 1200 G | - | Concrete works |

The following SANS specifications are also referred to in this document and the Contractor is advised to obtain them from Standards South Africa (a division of SABS) in Pretoria.

SANS 10396: 2003: Implementing Preferential Construction Procurement Policies using Targeted Procurement Procedures

SANS 1914-1 to 6 (2002): Targeted Construction Procurement

SANS 1921 – 1 (2004): Construction and Management Requirements for Works Contracts
Part 1: General Engineering and Construction Works and where accommodation of traffic is involved:

SANS 1921-2 (2004): Construction and Management Requirements for Works Contracts
Part 2: Accommodation of Traffic on Public Roads Occupied by the Contractor.

In the event of any discrepancy between a part or parts of the Standardized or Particular Specifications and the Project Specification, the Project Specification shall take precedence. In the event of a discrepancy between the Specifications, (including the Project Specifications) and the drawings and / or the Bill of Quantities, the discrepancy shall be resolved by the Engineer before the execution of the work

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under the relevant item.

The standard specifications which form part of this contract have been written to cover all phases of work normally required for road contracts, and they may therefore cover items not applicable to this particular contract.

3.1.1 Site Clearance

- This entails clearing of area envisaged to be used for the tunnels as well as preparation of the land for installation of the tunnels, water reservoirs and pump station.

3.1.2 Earthworks and Site Preparation

Normal regulations regarding safety, municipal by-laws, contamination of water sources, erosion, siltation etc. will still apply. Site preparations & establishment: SABS 1200 AA (4) and setting out of works: SABS 1200 AA (5.1.1)

- Orientation: The longitudinal axis of the building shall be placed in an east-west direction with the higher side of the mono pitch roof facing north, unless the prevailing wind would be from that direction, in which case the building may be turned up to 45 degrees.
- The site, including an area extending to at least 2 meters longitudinally and 2m in front of front and back gable must be cleared and stripped of all plant materials, roots and topsoil prior to site levelling.
- The cleared and stripped material is to be stockpiled away from the construction site and is to be levelled/replaced once all construction is complete.
- The site is to be levelled prior to any construction.
- Compaction of the site shall take place at optimum moisture content (OMC) to a maximum dry density of at least 95% of Mod. AASHTO. The Contractor shall arrange independent compaction testing before the floor slabs are cast. Four (4) distributed places per site shall be tested, once off, after completion of the compaction of the floor base. (Test results are to be provided). The floor is to be inspected prior to the pouring of any concrete.
- Clearing and grubbing of the road reserve and drainage area to specification for road. All topsoil removed during this process must be stockpiled in heaps not higher than 1m for later use during rehabilitation and landscaping. Clearing and grubbing must cover the entire extent of the construction width and include all space to be taken by drains
- Road base to be compacted to 95% Mod AASHTO (quantities are located under excavation for new shed). Compact G6 selected layer to 93% mod AASHTO density
- Apply soil poisoning around the house by a specialist and provide guarantee

3.1.3 Provision of Electricity

- Supply and install the internal electric, lighting and switches
- Supply & connect main electricity control panel inside the house. (Main DB)
- Establish low voltage reticulation in layers house for lighting and plug points.

3.1.4 Construction of the house

- Refer to drawing for the details for the plan and design of the house.
- All materials used must be new.
- All works to be executed to engineer specifications.

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- All building material used to be SABS approved (stamped where applicable)
 - Foundation to be designed as per Geotech site classification
-
- Clear all vegetation matter, tree stumps and all debris for excavation to 5m around the house unit.
 - Earthfilling to be done with material excavated and stockpiled on site, compacted to 95% Mod AASHTO in 150mm layers
 - All areas (floors, apron) to be compacted before concrete is cast
 - All rubble / building materials must be removed from the building site after completion of the building.
-
- Foundations of internal and external walls to be excavated to a minimum of 600mm below ground level
 - Compact foundation until no further collapse is encountered.
 - 600x250mm thick strip foundations min 600mm below ground.
 - 150mm thick hard-core fill compacted in layers not exceeding 75mm.
 - 150mm thick floor slab with option of 25mm thick granolithic screed or 100mm thick with power float finish painted with light grey epoxy paint unless specified.
 - Build external foundation walls (230 mm plinth wall with brick force) to a minimum height of 170mm above the highest surrounding soil surface.
-
- Use 25MPa/ 19mm for all concrete works
 - Provide concrete reinforced with R-193 & R-500 mesh
 - All concrete must be properly cured for at least 3 days by keeping it wet or properly covered with plastic.
-
- External walls to be single leaf 230mm thick cement Maxi brick (73x222x106) or similar approved (min 7Mpa) on 375 micron DPC
 - 2,8mm brick force every 4th course, as well as every course above windows and doors or as specified by the Engineer
 - Internal walls 115mm maxi brick on flat and duly bonded (built into) to external walls every 4th course, DPC and brick force as above
 - Brick on edge windowsills
 - Cement mortar mix for walls to be 1:5 proportion by volume of 2 bags of cement (1 wheelbarrow)
 - Internal and external walls to be neatly plastered and painted
-
- Floor to be tiled or have a smooth steel-trowelled finish
 - Timber rafters – all exposed part to be treated (painted) with wood creosote
 - Steel doors and window frames to be painted with 1 coat universal undercoat (oil based) and 2 final coats of enamel paint in addition to factory painted red oxide

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- All glass to comply with SABS 0137
 - Glass area of less than 0,75m² to be 3mm thick
 - All glass more than 0,75m² to be 4mm thick
 - Glass to bathroom to be 4mm obscured glass
-
- Corrugated IBR profile roof sheeting or similar approved on 50x76 SA pine purlins on timber trusses or similar approved (to specialist detail) with SABS approved underlay
 - 2,4mm galvanised roof wire anchors built-in 6 courses deep into walls
 - 12x225mm SA pine fascia board on rafter ends
 - 127x85 OG gutters fixed to fascia by internal hangers to manufacturers detail
 - 110x110mm downpipes fixed to wall to manufacturers detail
-
- Cliscoe type steel window frames (1 mm) or similar approved
 - Timber hollow core internal doors on min. 1mm thick pressed steel door frames
 - Solid hard wood 2 or 4 panel meranti to external walls (treatment to BOQ specification)
 - Internal doors flush panel complete with locksets.
 - Hardwood doors externally complete with lockset.
 - Shower curtain on steel rails for showers
 - Marble slab for kitchen sink
-
- Ceramic wash hand basin min 360mm DIA with tap to bathroom
 - Cistern – porcelain/ heavy duty plastic with 11 litres water capacity, complete with ball& bell valve, flushing mechanism and flush pipe
 - WC pan glazed fire-clay/glazed porcelain, fixed to floor (1:3 cement mortar mix). Seat heavy duty plastic, flap and hinges of similar quality fixed to the pan.
 - One stainless steel sink with tap to kitchen. Sink at least 900mm long ad securely fixed to wall with brackets & silicon sealed at wall.

3.1.5 Employer's Design, Considerations, Requirements and Scope Summary

The Engineer's design of the Works is to be used as guide to the complete the construction works. The Employer retains the right to issue whatever additional drawings during the progress of the works as may be required.

3.1.5.1 Clearing and excavation of foundations

The work to be done shall consist inter alia of the following:

- Site Clearance
- Removal of trees, mounds, and obstructions
- Cut and fill operations
- Compaction

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- Soil poisoning
 - Excavation for foundations

3.1.5.2 Concrete and reinforcement of foundations and floor

The work to be done shall consist inter alia of the following:

- 25 MPa/19mm concrete
- Formwork and finishing
- Movement joints
- Mild steel, high tensile steel and Fabric reinforcement

3.1.5.3 Masonry

The work to be done shall consist inter alia of the following:

- Brickwork of NFX bricks in class II mortar
- Brickwork reinforcement
- Pre-stressed fabricated lintels
- Turning pieces and galvanised hoop iron ties
- Fibre cement window sills

3.1.5.4 Waterproofing

The work to be done shall consist inter alia of the following:

- Supply and installation of DPC
- Joint Sealants

3.1.5.5 Roof Coverings

The work to be done shall consist inter alia of the following:

- IBR profile sheeting
- Roof and wall insulation
- Carpentry and joinery
- Eaves and verges

3.1.5.7 Plastering

The work to be done shall consist inter alia of the following:

- Screeds
- Internal backwash Plaster
- External backwash Plaster

3.1.5.10 External Work

The work to be done shall consist inter alia of the following:

- Excavation and filling
- Electrical Installation

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- Solar power system
 - Low pressure geyser

3.1.6 Design Services and Activity Matrix

The service provider is responsible for the construction of the permanent works. The contractor shall also be responsible for the safety of all temporary formwork, support work required in the construction whenever required.

These Model Preambles for Trades, and any Supplementary Preambles, shall be read in conjunction with and shall form part of the descriptions of items in the bills of quantities.

Where descriptions or Supplementary Preambles in the bills of quantities differ from these Model Preambles for Trades, the descriptions or Supplementary Preambles in the bills of quantities shall take precedence. Where supplementary preambles differ from descriptions in the bills of quantities, the descriptions in the bills of quantities shall take precedence.

Except where otherwise stated, all preambles contained in any individual Trade Preamble shall apply equally to any work of a similar nature in all other trades.

The following abbreviations shall apply:

- American Association of State Highway and Transportation Officials
- American Institute of Steel Industries
- British Standard
- Co-ordinating Specifications issued by the Central Co-ordinating Committee under the auspices of the South African Bureau of Standards
- Council for Scientific and Industrial Research
- South African Bureau of Standards and the number following shall refer to the relevant specification or code of practice as the case may be.

Materials and workmanship shall be the best of their respective kinds. Only new and undamaged materials shall be used in the Works. Materials to be permanently installed into the works shall not be used for any temporary purposes on site. Work shall be to the approval of the Principal Agent

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and shall be executed in accordance with the relevant manufacturer's written recommendations and instructions where applicable.

For the purposes of submission of tenders, rates for items described in the bills of quantities by trade names, catalogue references, etc. shall be for the particular type and manufacture specified.

The approval of the Principal Agent shall be obtained prior to any substitution and where products or materials, etc. other than those specified are used, adjustments in the rates will be made if necessary.

Rates for manufactured items shall include assembling complete and handing over in proper working order.

Any references given in brackets at the end of certain descriptions shall refer to the relevant references on the drawings or schedules.

Water shall be clean and free from injurious amounts of acids, alkalis, organic matter and other substances and shall be suitable for its intended use.

All work shall be executed in accordance with the requirements of SANS 0400.

The dimensional and positional accuracy of the buildings and their component parts shall comply with Grade II requirements of SANS 0155 unless otherwise stated.

References in these "Model Preambles for Trades" to other documents, including SANS Specifications

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

In taking down and removing existing work the utmost care shall be observed to prevent any structural or other damage to remaining portions of the building. The Contractor shall ensure the stability of all structures during alteration work.

Special care shall be exercised during the progress of the work to ensure that any electrical installations, water supply pipes, telephone and other services which may be encountered are not interfered with and notice shall be given to the Principal Agent if any disconnection or alterations become necessary.

The Contractor shall take all precautions necessary to prevent any nuisance from dust whilst carrying out the work.

Materials recovered from the alterations (except where described as to be re-used or to be handed over to the Employer) will become the property of the Contractor, who may allow credit in respect thereof where provided for in the bills of quantities. Such materials shall not be re-used in new work without written permission from the Principal Agent.

Materials described as "removed" shall be removed from the site immediately.

Materials described as "handed over to the Employer" shall be carefully dismantled where necessary, neatly stored under cover on the site where directed and protected from damage, until required.

Materials described as "set aside for re-use" shall be carefully dismantled where necessary, cleaned, neatly stored under cover and protected from damage until required for re-use. Any damage caused to such materials during removal, storage or refixing shall be made good at the Contractor's expense.

The Contractor shall be responsible for the removal from the site of all materials, debris and rubbish resulting from the alterations.

The Contractor shall make good in all trades to existing work where damaged or disturbed through the alterations with all necessary new materials to match the existing.

Where new openings are formed or openings altered in existing walls, the wall above the opening shall be broken out and a new brick, in situ concrete or prestressed concrete lintel inserted, complete with all necessary reinforcement, formwork, turning piece, etc., the jambs and portions of openings as described shall be built up with new brickwork or blockwork properly toothed and

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

bonded to existing, cavities of hollow walls shall be closed where necessary and finishes shall be made good all round and into reveals.

Where existing openings are given in number as built up, the existing surfaces all round shall be prepared as necessary, brickwork or blockwork properly toothed and bonded to existing, wedged up to underside of existing lintel and finishes shall be made good on both sides.

Descriptions of demolitions give a rough guide only as to the scope of the work. Tenderers are therefore advised to visit the site before submitting a tender and to acquaint themselves with the nature and extent of the work to be done and the value of recoverable materials which are not to be re-used or handed over to the Employer. Unless otherwise stated, loose furniture, kitchen and other equipment, apparatus, machinery, etc shall remain the property of the Employer and the removal thereof does not fall within the scope of this Contract.

The Contractor shall completely demolish the buildings, etc in a careful, skilful, practical and safe manner down to 150mm below ground level.

Demolitions shall include breaking up and removing:

all floors and surface beds;

all external screen walls, steps, ramps, aprons, surface water channels, rainwater sumps, gulleys, etc attached to the building to be demolished;

all services, manholes, etc in ground to a point not less than 1 m beyond the perimeter of the building including plugging off ends of all remaining pipes, drains, etc, filling in holes where necessary and ramming and levelling to ground level.

Where only a portion of a building is to be demolished, it shall be done without damage to the remaining portion of the building. Any such damage shall be made good by the Contractor at his own expense.

The Contractor shall, before commencing work, obtain all necessary authorisation for carrying out the work, by whatever means including the use of pneumatic equipment or blasting, give all necessary notices and pay all charges and fees in connection therewith. He shall also comply with all regulations pertaining to rodent extermination and he shall obtain the requisite Rodent Extermination Clearance Certificate and pay all necessary fees. All receipts and certificates shall be left in the safekeeping of the Principal Agent. All the above mentioned charges and fees shall be paid by the Contractor and included in his prices.

The Contractor shall give ample notice to the Principal Agent and Local Authorities regarding any

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

disconnections necessary prior to the removal or interruption of electrical or telephone cables, water and sanitary services, etc.

After the handing over of the site to the Contractor, the full risk of any loss or damage to buildings to be demolished shall be the responsibility of the Contractor and he shall take such precautions as he deems necessary against such loss or damage.

Materials recovered from the demolitions will become the property of the Contractor, who may allow credit in respect thereof where provided for in the bills of quantities. Such materials shall not be re-used in any new work without written permission from the principal Agent.

The Contractor shall be responsible for the removal from the site of all materials, rubble, debris and rubbish resulting from the demolitions.

Soil insecticides shall comply with SANS Specification 1165.

Work shall be carried out in accordance with "The application of soil insecticides for the protection of buildings" – SANS Code of Practice 0124.

Filling over site shall be spread, levelled, watered and consolidated in layers not exceeding 300mm.

All in situ concrete work (plain and reinforced) shall comply with SANS 1200G supplemented by the following Project Specification. Where SANS 1200G and the Project Specification are in conflict, the Project Specification shall take precedence.

Wherever the term "Engineer" appears in SANS 1200G or in the following Project Specification this shall be deemed to mean the Principal Agent's representative responsible for this section of the Works.

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

No treatment of the surface of the concrete will be required after the striking of the formwork. The finish of the concrete need not be more accurate than Degree of Accuracy III.

Imperfections such as small fins, bulges, irregularities, surface honeycombing and surface discolorations shall be made good and repaired by Approved methods. The finish of the concrete shall be accurate to Degree of Accuracy II.

(i) Smooth and Fair

This class of finish requires the highest standard of concrete work, formwork, accuracy and technique.

Concrete placed in any one structure to give this finish shall be made from cement and aggregates from the same source. The grading of the aggregate shall be kept constant.

Formwork shall be metal, timber or other approved material in new condition designed and constructed to suit the particular job in hand and with shutter bolts and joints between panels in a regular pattern approved by the Principal Agent. Joints between panels shall be watertight, but the use of sealing tape which will mark the concrete shall not be permitted.

Designated joints shall be in the position and of the details shown upon the working drawings. Should the Contractor wish to incorporate further construction joints or amend the position of those shown to suit his own requirements or technique, this may be allowed provided that all design considerations are met, that the prior approval of the Engineer is obtained and that any extra costs are borne by the Contractor.

In the case of horizontal construction joints, the top edge of the concrete on the smooth and fair finished side shall be struck true and level with a trowel.

Special care shall be taken to ensure that forms are clean and free of all pieces of tying wire, nails and other debris at the time of concreting.

The standard of finish shall be such that upon removal of the formwork, no further treatment, other than treatment of bolt holes if required, shall be found necessary to provide a straight, smooth and uniform finish of good quality and consistent colour and texture, free of all honeycombing, etc. Any defect shall be made good by either removing or replacing the defective concrete or, in certain instances only, by patching.

Where prescribed mix concrete is specified the proportions of constituents, the maximum size of coarse aggregate and the estimated minimum compressive strength shall be as specified in the following table:

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| Class of Concrete | Estimated minimum compressive strength in MPa at 28 days | Maximum nominal size of coarse aggregate in mm | Proportions of Constituents | | |
|-------------------|--|--|-----------------------------|------------------------|--------------------------|
| | | | Cement (Parts) | Fine aggregate (Parts) | Coarse aggregate (Parts) |
| A | 7 | 37,5 | 1 | 4 | 8 |
| B | 15 | 19 | 1 | 3 | 5 |
| C | 20 | 19 | 1 | 2,5 | 3,5 |

Cement shall be ordinary CEM 1 32,5 cement.

Should cement and aggregates be mixed by volume, the contents of a 50 kg sack of cement shall be taken to be 0,033 m³.

Notwithstanding the requirements contained in SANS 1200G, the Principal Agent may permit certain items of non-structural concrete to be mixed by hand.

If the concrete is mixed by hand, it shall first be mixed in a dry state on a clean non-absorbent surface until it is of uniform colour and consistency. Just enough water shall then be added to permit mixing and working, at which stage the concrete shall continue to be mixed until it is of uniform colour and consistency.

C3.2.2h

Where strength concrete is specified it shall be designated by its specified strength followed by the size of stone used in its manufacture, e.g. 30 MPa/19mm.

The water/cement ratio shall be as Table 5 of moderate exposure conditions.

“No Fines” concrete

“No-fines” concrete shall consist of one part cement to eight parts aggregate graded from minimum 6mm to maximum 13mm size.

The quantity of water used shall be just sufficient to form a smooth grout which shall completely coat every particle of aggregate and also to ensure that the grout is just wet enough to form a small fillet at each point of contact between the stones. “No-fines” concrete mixed with excessive water, which results in a thin grout which drops off the aggregate, will be rejected.

“No-fines” concrete shall be placed in its final position within 20 minutes of mixing and shall be placed in continuous horizontal layers. Concrete shall be spade worked sufficiently to ensure that it fills the forms but vibrating, tamping or ramming will not be permitted.

The use of ready-mixed concrete and the acceptability of test results from a central concrete production facility shall be subject to the written approval of the Engineer.

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Aggregates of low density shall comply with SANS 794.

A competent and experienced foreman shall superintend personally the whole of the concrete construction and pay special attention to:

- (a) The quality, testing and mixing of materials,
- (b) The placing and compaction of concrete,
- (c) The construction and removal of formwork and
- (d) The sizes and position of reinforcement

The Contractor shall obtain the permission of the Principal Agent before commencing concreting of foundations or reinforced structure.

No inspection, approval, authorisation to proceed, comment or instructions following from such an inspection, or failure of the Principal Agent to comment on any particular aspect of the work, shall be deemed to relieve the Contractor in any way from his obligation to ensure through his own supervision that the work is constructed in every way in accordance with the Drawings, Specification and Conditions of Contract, nor relieve him from his obligations to make good any fault or defect, nor shall it be deemed that there is any obligation on the Principal Agent to inspect all or any part of the Works or that such inspection is necessarily complete in every respect.

Rates for concrete work shall include all "construction joints" other than "designated joints" as defined in SANS 1200G clause 2.4.3 which are measured separately, for the design of strength concrete mixes and all testing of concrete and materials other than compressive strength testing of concrete samples taken from concrete being placed in the Works. The Contractor shall only be entitled to payment for those samples and compressive strength tests called for by the Engineer and which pass the test requirements.

Formwork to slabs and beams shall be cambered where required.

Rates for formwork to soffits shall include propping not exceeding 3,5 m high unless otherwise described. Formwork to walls and columns is not exceeding 3,5 m high above bearing level unless otherwise described.

Standard fabric reinforcement shall be as included in Table 1 of SANS 1024 and shall have 300mm wide laps.

The mass of binding wire is not included in the mass of the reinforcement and the cost thereof shall be included in the rates for the reinforcement.

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Materials shall comply with the following specifications and requirements:

Precast concrete paving slabs

Cement, water, aggregates and reinforcement shall be as described under D. CONCRETE, FORMWORK AND REIN-FORCEMENT.

Concrete shall be as described under D. CONCRETE, FORMWORK AND REINFORCEMENT and unless otherwise stated shall be prescribed mix concrete Class C but with coarse aggregate of an appropriate size.

Before each casting, moulds shall be coated with a suitable release agent which will not in any way discolour the surface of the finished product or impair its strength. Where items are described as “finished smooth from the mould” or as “precast terrazzo”, moulds shall be made to a high degree of accuracy and shall be such as to leave even and smooth surfaces.

Items shall be suitably cured, shall not be handled whilst still green and shall not be built in within 21 days of casting.

Unspecified reinforcement required for manufacturing, handling and erection purposes and for reinforcing projecting and other unwieldy portions of blocks shall be provided by the Contractor at his discretion.

Blocks shall be bedded and jointed solidly in Class I mortar as described under F. MASONRY and shall be pointed with slightly keyed joints.

Precast concrete work shall include reinforcement required for manufacturing, handling and erection purposes, steel rod or wire hooks and/or mortices for lewis bolts required for handling and transporting, any necessary temporary propping and strutting and bedding, jointing and pointing.

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F.1 MATERIALS

Materials and workmanship shall comply with the following specifications and requirements:

| Material | SABS Specification | Type |
|--------------------------------|--------------------------------------|--------------------------------|
| Burnt clay masonry units | 227 | - |
| Calcium silicate masonry units | 285 | - |
| Lime for use in building | 523 | Hydrate bedding mortar lime |
| Sand for plaster and mortar | 1090 | - |
| Concrete masonry units | 1215 | - |
| Prestressed concrete lintels | 1504 | - |
| Burnt clay paving units | 1575 | - |
| Metal ties for cavity walls | 28 | - |
| Masonry cement | ENV 413-1 | MC 12,5 |
| | CKS Specification | |
| Concrete flooring tiles | 208 | |
| | SABS Code of Practice | |
| Concrete masonry construction | 0145 | |
| The structural use of masonry | 0164 | |
| Masonry walling | 0249 | |

Sand shall be washed where necessary and screened through a 2,4mm mesh sieve.

Burnt clay bricks shall be of nominal size 222 x 106 x 73mm unless otherwise stated.

Common bricks shall be General Purpose bricks.

Extra hard burnt bricks shall be General Purpose (Special) bricks.

Facing bricks shall exhibit a liability to efflorescence not in excess of "Slight" and water absorption when tested in conformity with the requirements of SANS 227 shall not exceed 14%.

Particular care shall be taken to preserve arises and faces of facing and paving bricks during transit

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and handling.

Concrete bricks shall have a minimum compressive strength of 7 MPa.

Quarry, cement and similar tiles shall be of approved manufacture, even in shape and size, free from cracks, twists or blemishes and uniform in colour.

Wire ties shall be of galvanized steel of the single wire type for solid walls and either the "Butterfly" or Modified PWD type for hollow walls. Ties shall be of sufficient length to allow not less than 75mm of each end to be built into brickwork or embedded in concrete.

Brickwork reinforcement shall be manufactured from hard drawn steel wire conforming to BS 785 and shall consist of two 2,8mm diameter main wires with 2,5mm diameter cross wires at 300mm centres welded at intersections.

Brickwork reinforcement shall be lapped not less than 300mm at end joints and for a length equal to the width of the widest reinforcement at intersections.

F.8 MORTAR

Mortar shall comply with the following table:

| 1 | 2 | 3 | 4 |
|--------------|----------------------|--------|--|
| Mortar Class | Masonry Cement kg | Lime | Sand (measured loose and damp) max |
| I | 50 | 0 – 10 | 130 |
| II | 50 | 0 – 40 | 200 |
| III | 50 | 0 – 80 | 300 |

Mortar shall be Class II unless otherwise specified.

Mortar plasticizers may only be used with the approval of the Principal Agent.

The materials shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated.

Mortar shall be produced in such quantities as can be used before commencement of set and no mortar that has set shall be used.

Contractor

Witness 1

Witness 2

Employer

Witness 1

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Compo mortar shall be Class III mortar in accordance with clause F.8 but with a lime content of 80 l.

The lime and sand shall be mixed dry until of uniform colour, water added and the mixture turned over until the ingredients are thoroughly incorporated.

Immediately before use, the cement shall be mixed in and the requisite amount of water added.

Compo mortar shall be produced in such quantities as can be used before commencement of set and no compo mortar that has set shall be used.

Wherever practicable, brickwork shall be built in stretcher bond. Unless legitimately required to form bond, no false headers shall be used. English bond shall only be used where specifically so indicated or where stretcher bond is not practicable.

Brickwork, unless otherwise described, shall be built in Class II mortar.

Bricks shall be laid on a solid bed of mortar and all joints shall be grouted up solid.

The brickwork shall be carried up in a uniform manner, no part being raised more than 1,2 m above adjoining work.

Where necessary, bricks shall be wetted before being laid and the course of bricks last laid shall be well wetted before laying a fresh course upon it.

Walls in thicknesses of more than one skin shall have at least five wire ties per square metre. Linings to concrete, unless otherwise specified, shall be tied to the concrete with at least five wire ties per square metre.

Hollow walls, unless otherwise specified, shall be built of two half brick skins with cavity between, tied together with at least five wire ties per square metre.
The cavities shall be kept free of all rubbish, mortar droppings and projecting mortar.

Mortar joints to brickwork shall be not less than 8mm or more than 12mm thick.

Unless otherwise described, all blockwork shall be built in stretcher bond. Whole blocks shall be used except where bats or closers are required to form bond.

Blockwork, unless otherwise described, shall be built in Class II mortar.

Solid blocks shall be laid on a solid bed of mortar and all joints shall be grouted up solid.

Hollow blocks shall be laid in shell bedding, i.e. only the inner and outer shells of the blocks shall be covered with mortar. Vertical joints shall be similarly formed.
The blockwork shall be carried up in a uniform manner, no part being raised more than 1,2 m above

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

adjoining work.

Clay blocks shall be wetted before being laid and the course of blocks last laid shall be well wetted before laying a fresh course upon it.

Centres and turning pieces to soffits of arches and lintels shall be left in position for not less than 14 days.

Face brickwork shall be built in stretcher bond, unless otherwise specified, to a true and fair face. Perpend shall be vertically aligned.

Facing bricks shall be mixed to ensure that the proper blending of bricks within the colour range of each facing brick being used is obtained.

Clay bricks and tiles shall be wetted before fixing and shall be solidly bedded and jointed in Class I mortar and pointed with slightly keyed joints.

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

G.1 MATERIALS

Materials and workmanship shall comply with the following specifications and requirements:

| Material | SABS Specification | Type and/or Additional Requirements |
|--|--------------------------------------|--|
| Bituminous damp-proof courses | 248 | Type FV |
| Polyolefin sheet in damp-proof courses to walls, sills, etc | 952 | Type B |
| Ditto, to floors and basements | 952 | Type C |
| Mastic asphalt for roofing | 297 | - |
| Mastic asphalt for damp-proof courses and tanking | 298 | - |
| Bituminous roofing felt | 92 | Type 60 |
| Polyolefin sheet for the waterproofing of flat roofs | 952 | Type A |
| Chloroprene rubber sheet (for waterproofing) | 580 | At least 2,5 mm thick and 1200 mm wide |
| Sealing compounds with two-component polysulphide base | 110 | Type 2 Gun Grade |
| Sealing compounds with two-component polyurethane base | 1077 | - |
| | SABS Code of Practice | |
| The waterproofing of buildings | 021 | |
| The installation of profiled roof and side cladding | 0237 | |

Waterproofing to roofs, basements, etc shall be carried out by workmen who are experienced in this type of work.

All joints in damp-proof course to walls shall be lapped a minimum of 150mm except at junctions and corners where the lap shall equal the full thickness of the wall.

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Materials and workmanship shall comply with the following specifications and requirements:

| Material | SABS Specification |
|---|--------------------------------------|
| Concrete roofing tiles | 542 |
| Clay roofing tiles | 632 |
| Softwood bracker and battens | 653 |
| Fibre-cement sheets: profiled and flat | 685 |
| Aluminium alloy and toughened sheets | 903 |
| Zinc coatings | 934 |
| Polyethylene sheeting for roof underlay | 952 |
| Metal roofing tiles | 1022 |
| Glass reinforced polyester laminated sheets (profiled or flat) | 1150 |
| Fasteners for roof and wall coverings in the form of sheeting | 1273 |
| Materials for thermal insulation of buildings | 1381 |
| | BS Specification |
| Sheet zinc | 849 |
| Sheet lead | 1178 |
| Sheet aluminium | 1470 |
| Sheet copper | 2870 |
| | SABS Code of Practice |
| Fixing of concrete interlocking roofing tiles | 062 |

Galvanized steel profiled sheets, ridge and hip coverings, etc shall be coated with a minimum of 275 g zinc per m² and shall be free of white rust.

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Galvanized sheet iron shall be rolled steel sheet coated on both sides with a minimum of 275 g of zinc per m² and shall be free from white rust.

Where nailing and screwing is required:

- galvanized iron nails and screws shall be used for galvanized sheet iron and sheet zinc
- copper or copper alloy nails and screws for sheet copper and sheet lead
- aluminium alloy or stainless steel nails and screws for sheet aluminium.

Sheet metal flashings shall have 100mm laps and linings to valleys, secret gutters, etc 225mm laps.

Rates for profiled sheet roofing and rolled edges, ridge and hip coverings, flashing pieces, etc of metal, fibre-cement, plastic, etc shall include fixing accessories.

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

Materials shall comply with the following specifications and requirements:

| Material | SABS Specification | Grade of Class |
|--|-------------------------------|---|
| Softwood general structural timber | 563 | Stress grade 4 |
| Softwood engineering timber | 1245 | As specified |
| Softwood studs for timber frames in buildings | 1146 | - |
| Softwood bracing and battens | 653 | - |
| Softwood flooring boards | 629 | Flooring grade Heavy flooring boards |
| Softwood joinery timber | 1359 | - |
| Hardwood joinery timber | 1099 | Knotty grade |
| Hardwood strip flooring | 281 | As specified |
| Wooden ceiling and panelling boards | 1039 | As specified |
| Laminated timber (glulam) | 1460 | As specified |
| Gypsum plasterboard | 266 | - |
| Wood fibreboard | 540 | As specified |
| Wood-wool panels (cement bonded) | 637 | - |
| Fibre-cement sheets: profiled and flat | 685 | As specified |
| Fibre-cement boards | 803 | As specified |
| Plywood and composite board | 929 | As specified |
| Particle board: highly moisture-resistant exterior and flooring type | 1300 | - |
| Particle board: interior type | 1301 | - |
| Decorative laminates | 1405 | High pressure |
| Wooden doors (flush) | 545 | Class 4 Dry interior quality |
| Materials of thermal insulation of buildings | 1381 | - |
| Mild steel nails | 820 | - |
| Metal screws for wood | 1171 | - |
| Creosote | 538 | As specified |

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Softwood shall bear the relevant SANS mark and shall be ordered in the sizes in which it will be used as no scantlings of marked timber will be allowed. Should SANS marked timber be unavailable, the Principal Agent's prior permission shall be obtained before using unmarked timber.

All hardwoods shall be specially selected, well-seasoned, free from sapwood and well kiln dried. Meranti shall be Red or Medium Brown Meranti, even in grain and colour, selected from "Standard and Better" quality from Malaysia.

All timber used on the site, whether for permanent or temporary work, shall be free of borer or other beetle and termite infection. If the work under this contract falls within an area designated under Government Notice R2577 of 1978-12-29, permanent softwood fixed in the building shall be treated against borer, etc in accordance with Government Notice R451 of 1969-03-28 using Class B or C preservative. The type of preservative used shall be appropriate to the use of the timber. Any prescribed treatment shall comply with SANS 05.

When treated timbers are cut, the cut surfaces shall be effectively brushed with at least two coats of preservative solution.

Where applicable, construction methods shall comply with SANS 082. Boarded floors shall be laid in accordance with SANS 043. Roof trusses shall be manufactured, erected and braced in accordance with SANS 0243.

Timbers generally shall be in single lengths and jointing of timbers will only be permitted when the required length is unobtainable. Only the absolute minimum of joints to obtain a particular length will be permitted and such joints are to be evenly spaced along the length of the timber.

Finger-jointing of structural timber will be permitted, in which case it shall be manufactured in accordance with SANS 096.

Plate nailed timber roof trusses shall be of approved design and manufacture and constructed with softwood structural timber by a truss Fabricator holding a current Certificate of Competence awarded by the Institute of Timber Construction.

Each roof truss shall have all its members accurately cut and closely butted together and rigidly fixed by CSIR approved patented galvanized metal spiked connectors, precision pressed on both sides of each intersection by an approved method, all in accordance with the manufacturer's instructions.

The design, manufacture and transportation of the roof trusses, bracing, etc shall be under the

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control of a registered Structural Engineer in accordance with SANS 0160 and SANS 0163, who shall, after erection, provide a certificate confirming that the design, manufacture, transportation, erection and bracing has been carried out in accordance with this specification.

The design shall include for all live loads, wind loads and for dead loads imposed by roof covering, purlins, ceilings, etc.

Fully detailed shop drawings of all trusses, etc, indicating sizes, bracing, loading, etc, shall be submitted to the Principal Agent for approval prior to fabrication.

Unless specific erection instructions are given, erection shall be carried out in accordance with the procedures and recommendations of the manual "The Erection and Bracing of Timber Roof Trusses" published by the Institute for Timber Construction and the Council for Scientific and Industrial Research or as detailed by the designer.

Roof trusses and bracing shall include design and preparation of shop drawings.

Tongued and grooved boards for floors, panelling, etc shall be in long varying lengths with joints tightly cramped up and secret nailed. Flooring boarding shall be flush jointed with staggered heading joints and machine sanded after fixing.

Skirtings, cornices, rails, etc shall be in single lengths wherever practicable and shall have splayed heading joints where necessary. Skirtings shall be trenched at back.

All horns of door frames shall be checked and splayed back where frames are fixed projecting or flush with surface and built in.

Heads of screws in exposed faces of hardwood joinery shall be sunk and match pelleted.

Joinery shall have arras rounded angles and shall be blocked and planted on.

All face veneers shall be of kiln dried timber, free from knots, cracks, patchwork, sapwood and other defects, selected and glued, dried and machine-sanded to a smooth finish. All veneers shall be applied under hydraulic pressure.

Flush doors shall have solid timber edge strips with concealed edges. Where doors are to be finished with a transparent finish, the veneer and the edge strips shall be timber of the same species and as far as possible of matching colour. Unless otherwise described all flush doors shall be of interior quality, but where exterior quality doors are specified the glue used shall be of the WBP type.

Framed and ledged batten doors described as filled in with V-jointed boarding shall be filled in flush on one side with tongued and grooved vertical boarding, V-jointed on one or both sides and of the thickness stated. The boarding shall be in narrow widths, closely cramped up, rebated or tongued

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

on outer edges and housed to grooves in stiles and rails and twice countersunk brass screwed at each intersection with ledges and braces and the inner edges of the abutting stiles and rails shall be chamfered to form a V-joint at junction with the board.

Unless otherwise described double doors shall have rebated meeting stiles.

All nails and screws shall be of the size, length and type appropriate to their respective uses. All screws for hardwood joinery work shall be brass.

Items described as “plugged” shall be screwed to fibre, plastic or metal plugs at not exceeding 600mm centres. Where items are described as “bolted”, the bolts have been given separately.

Adhesives shall comply with BS 1204 and 4071 where applicable. Adhesives used in the manufacture of external joinery exposed to excessive moisture (e.g. kitchen and laboratory worktops) shall be of the WBP type.

Materials shall comply with the following specifications and requirements:

| Material | SABS Specification | Grade of Class |
|--|-------------------------------|---------------------------|
| Gypsum plasterboard | 266 | - |
| Fibreboard | 540 | As specified |
| Gypsum cove cornice | 622 | - |
| Wood-wool panels (cement-bonded) | 637 | - |
| Softwood bracing and battens | 653 | - |
| Fibre-cement boards | 803 | As specified |
| Plywood and composite board | 929 | As specified |
| Wooden ceiling and panelling boards | 1039 | As specified |
| Softwood studs for timber frames in buildings | 1146 | - |
| Materials for thermal insulation of buildings | 1381 | - |
| Expanded polystyrene thermal insulation boards | 1508 | - |
| Raised access flooring | 1549 | - |

Contractor

Witness 1

Witness 2

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Tongued and grooved boarding for ceilings shall be in long varying lengths, V-jointed one side and with joints tightly cramped up and secret nailed.

Branding for ceilings and eaves soffit coverings shall be symmetrically arranged with necessary smaller panels. Main branders shall be at right angles to roof timbers, with cross branders cut in between and branders shall be fixed with galvanized wire nails driven in on skew alternately in opposite directions.

Ceiling boards shall be in long lengths symmetrically arranged with necessary smaller panels, closely butted and secured at 150mm centres to branding with galvanized or cadmium-plated clout-headed nails.

Gypsum skim plaster shall be pure gypsum plaster finished with a steel trowel.

The ceiling panels shall be as described in the items and the panels shall be stiffened at back as recommended by the manufacturer to prevent bowing or sagging.

The exposed surfaces of all ceiling panels and supporting members shall be uniform in colour and free from surface blemishes.

The suspension grid system shall be an approved patent suspension system comprising 38mm galvanized steel main and cross tee bearers spaced in both directions at centres to suit sizes of ceiling panels used, with the cross bearers fitted between and notched to form flush fit with main bear

The suspension grid system shall be an approved patent suspension system comprising 38mm galvanized steel main and cross tee bearers spaced in both directions at centres to suit sizes of ceiling panels used, with the cross bearers fitted between and notched to form flush fit with main bearers. The exposed flange of the tees shall be 25mm wide, covered with a rolled aluminium cap painted a low sheen satin white. Cornices, etc shall be as described in the items and shall be finished to match the exposed tees.

The main tee bearers shall have holes for cross tees at 300mm centres and holes for hangers at 50mm centres. In addition, main and cross tee bearers shall be holed as necessary for and provided with timber wedges or steel clips where recommended by the manufacturer to prevent ceiling panels from lifting.

The web of the exposed cross tee bearers shall extend to form a positive interlock with the main tee bearers and the lower flange shall be cut back to provide a joint free appearance.

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All hangers shall be galvanized and shall be at centres to meet the requirements of the specification with one end fixed to the suspension grid main bearers and the other end fitted with suitable galvanized fixing cleat securely fixed to the structure. Fixing points shall be agreed to by the Principal Agent before any power shot fixings are made. Hangers shall not be suspended from air-conditioning ducts. Where recommended by the manufacturer, hangers shall be of the rigid type.

Component parts and fixings shall be non-corrosive and able to withstand atmospheric pollution. Surfaces of aluminium which are in contact with other materials when fixed, particularly metals, shall be suitably insulated to prevent electrolytic corrosion.

Ceilings shall comprise hangers, suspension grid system and ceiling panels, shall be constructed in a manner suitable for carrying air conditioning diffusers and light fittings in the positions required, shall be set out to layouts approved by the Principal Agent and shall have the standard suspension systems modified as necessary to work around any pipes or light fittings.

Gypsum plasterboard panels of the specified thickness generally in 1200mm widths and in long lengths shall be fixed grey side down with self-tapping screws to the suspension system with the joints between boards loosely butt jointed and covered with 50mm wide strips of self-adhesive fibre tape.

The plasterboard panels shall be finished with gypsum skim plaster trowelled to a smooth polished surface to the thickness, etc recommended by the manufacturer.

The suspension system shall be an approved patent concealed suspension system consisting of galvanized mild steel bearers suspended on approved non-rusting metal hangers spaced generally at 1200mm centres or to suit layout of air-conditioning ducts and other services, etc above ceiling with one end bolted to the bearer and the other end fitted with a galvanized fixing cleat securely fixed to the structure as required.

Fixing points shall be agreed to by the Principal Agent before any power shot fixings are made. Hangers shall not be suspended from air-conditioning ducting.

Ceilings shall comprise hangers, suspension system, ceiling panels and plaster finish, shall be constructed in a manner suitable for carrying air-conditioning diffusers and light fittings in the positions required, shall be set out to layouts approved by the Principal Agent and shall have the standard suspension system modified as necessary to work around any pipes or light fittings.

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

Materials and workmanship shall comply with the following specifications and requirements:

| Material | SABS Specification | Grade of Class |
|--|-------------------------------|---------------------------|
| Semi-flexible vinyl floor tiles | 581 | - |
| Resin modified vinyl floor tiles (thermoplastic) | 586 | - |
| Flexible vinyl flooring | 786 | - |
| Hardwood block flooring | 281 | Clear grade |
| Wood mosaic flooring | 978 | - |
| Textile floor coverings (pile construction) | 1375 | - |
| Textile floor coverings (needle-punched construction) | 1415 | - |
| Carpet underlays | 1419 | - |
| BS Specification | | |
| Sheet linoleum (calendered types), cork, carpet and linoleum tiles | 810 | - |
| Solid rubber flooring | 1711 | - |
| Felt backed linoleum | 1863 | - |
| SABS Code of Practice | | - |
| The laying of wood floors | 043 | |
| The installation of resilient thermoplastic and similar flexible floor coverings materials | 070 | |
| The installation of textile floor coverings | 0186 | |

Floor tiles shall be laid with continuous joints in both directions.

Patterned floor coverings shall be matched at joints.

Contractor

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Employer

Witness 1

Witness 2

Floor coverings, wall linings, skirtings, nosing, etc shall include all preparatory work to screened or plastered sur-faces, etc, priming coats and adhesives.

Floor coverings and wall linings shall be dressed around and into corners.

Wood block and wood mosaic flooring shall be sanded with a sanding machine and sealed with a coat of approved penetrating sealer.

Plastic handrails shall have welded and polished butt joints.

Material shall comply with the following specifications and requirements:

| Material | SABS Specification | Grade of Class |
|--|-----------------------|-------------------|
| Locks, latches and associated furniture for doors | 4 | - |
| Kitchen cupboards of steel, composite board and timber | 1385 | - |
| Single action overhead door closers | 1510 | - |
| Padlocks | 1533 | - |
| CKS Specification | | |
| Vitreous enamelled chalkboards | 36 | - |

Locks shall have the minimum possible number of interchangeable keys. Cylinder locks and locks described as “en suite” shall be clearly marked with consecutive numbers and each key shall be punched with the corresponding number of the relative lock.

Unless otherwise described, ironmongery is to be fixed to wood.

Items described as “plugged” shall be screwed to fibre, plastic or metal plugs.

Screws, bolts, etc for fixing of ironmongery shall be of matching metal and finish, except for aluminium ironmongery or ironmongery fixed to aluminium in which cases stainless steel screws may be used.

All necessary preparation of pressed steel door frames for the fixing of ironmongery to the frames has been included with the pressed steel door frames.

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

Steel cupboards shall be finished with baked enamel. Tops of floor cupboards shall have laminated plastic covering.

Cupboards shall be fitted with all necessary hinges, handles, catches, etc. Cupboards shall be securely fixed with all necessary screws and fibre, plastic or metal plugs.

Where cupboards are described as a “series”, tops shall be continuous and cupboards shall be bolted or screwed together, including bolts, screws, holes, etc.

All structural steelwork shall comply with SANS 1200H or 1200HA as applicable.

Whenever the term “Engineer” appears in SANS 1200H or 1200HA or in the following Project Specification this shall be deemed to mean the Principal Agent's representative responsible for this section of the Works.

SANS 1200H

C3.2.2.1p
The grade of mild steel shall be Grade 300 W complying with SANS 1431.

C3.2.2.2p
The Contractor shall be responsible for the preparation of all shop detail drawings.

C3.2.2.3p
This clause shall not apply.

C3.2.2.4p
Structural steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 064 and all surfaces shall be treated with one coat of zinc chromate primer complying with SANS 679 to a minimum dry film thickness of 30 micrometres before leaving the workshop. Upon delivery to the site and again after erection all bared surfaces shall be made good with similar primer.

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

Materials and workmanship shall comply with the following specifications and requirements:

| Material | SABS Specification |
|---|--------------------------------------|
| ISO metric bolts, screws and nuts | 135 |
| ISO metric precision hexagon-headed bolts and screws, and hexagon nuts | 136 |
| Expanded metal | 190 |
| Steel windows and steel doors | 727 |
| Hot-dip (galvanised) zinc coatings | 763 |
| Strongroom doors | 949 |
| Anodised coatings on aluminium | 999 |
| Steel door frames | 1129 |
| Mushroom- and countersunk-head bolts and nuts | 1143 |
| Chromium plating of metalwork | 728 |
| | CKS Specification |
| Adjustable glass-louved windows | 413 |
| | BS Specification |
| Aluminium sheet and strips | 1470 |
| Aluminium extruded tube and hollow sections | 1474 |
| Aluminium bars and sections | 1476 |
| | SABS Code of Practice |
| Welding of metalwork | 044 |
| The design and fabrication of articles for hot-dip galvanising | 0214 |

Steel shall be mild steel of approved commercial quality. Steelwork shall be cleaned and prepared by wire brushing in accordance with SANS 064 and given one coat of primer complying with SANS 679 before leaving the workshop.

C3.2.3.3P

Steelwork described as "galvanized" shall be galvanized by means of the hot-dip process after fabrication.

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

Where welding on site is unavoidable, such welded joints shall be cleaned down and cold galvanized to approval.

Stainless steel shall be AISI Type 304 stainless steel and shall be buffed to an even satin finish. Stainless steel screws shall be used for fixing stainless steel.

Aluminium extrusions shall be of 6063-T6 alloy and temper. Aluminium sheet and strips shall be of 1200-H4 alloy and temper.

Joints in all aluminium members shall be formed in an approved manner so that the joints are practically invisible. Screw heads, pins, rivets, etc shall be concealed as far as possible. 300 Series stainless steel screws and bolts shall be used for jointing and fixing aluminium work.

The surfaces of all aluminium which are in contact with other materials when fixed shall be suitably insulated with a non-absorbent insulating material to prevent corrosion. All aluminium work shall be suitably protected against damage, deterioration or discolouration caused by mortar droppings, paint, etc by taping with removable tape, covering with temporary casings or by covering with motor oil.

C3.2.3.6P

Aluminium described as "anodized" shall be treated with Grade 25 coating thickness for exterior use or Grade 15 for interior use as specified, to the required finish. All alloys to be anodized shall be suited to anodizing.

Nuts shall be of at least the strength grade appropriate to the grade of bolt or other threaded element with which they are used.

Metalwork described as "screwed" to steel, wood, etc or "plugged" to brickwork, concrete, etc shall be fixed at not exceeding 500mm centres, with necessary holes, countersinking, threading, screws, set screws, self-tapping screws and fibre, plastic or metal plugs.

Where metalwork is described as "bolted" to steel, wood, brickwork, concrete, etc, the bolts are measured elsewhere.

All welds shall be cleaned and filed or ground off smooth to approval. All welded joints shall be continuous.

Metalwork shall have all sharp edges ground smooth. Tubular and pipe work shall include running joints. Rails, etc described as "continuous" shall be in long lengths with welded joints.

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

C3.2.3.12.1P

Frames shall project not less than 20mm into floor finish. Except where described as galvanized, frames shall be treated with one coat of primer complying with SANS 679 before leaving the factory. Frames are to jambs and heads of openings. Frames for single doors shall be provided with two 100mm steel butt hinges and an adjustable striking plate for a mortice lock and frames for double doors shall be provided with four 100mm steel butt hinges. Butt hinges shall be steel butts with loose pins, welded to frames. Where necessary mortar caps shall be welded to frames and back plates shall be welded on behind tapping's for screws.

C3.2.3.12.2P

Cupboard door frames shall be as described in N.10.1, but with thresholds of unequal channel section, two 100mm steel butt hinges to hanging stiles, two 75mm steel butt hinges to hanging stiles above transoms, necessary striking plates for mortice locks and keeps for barrel bolts.

C3.2.3.12.3P

Combination doors and frames shall be manufactured of 1,6mm thick steel plate. Frames shall be as described in N.10.1. Doors shall be standard design and required profile, with a 44mm wide edge all round, vertical reinforcing ribs pressed in and with two reinforcing rails welded on. The door shall be provided with two lever mortice lock with lock box welded to inside. Doors shall be welded to steel butts.

C3.2.1Q

All fittings to windows, doors, etc shall be chromium plated.

Fixed lights and opening sashes shall be in single squares. Windows, etc of single unit construction shall have weather bars at transoms above opening sashes.

Composite windows not of single piece construction shall be coupled with standard coupling mullions and transoms that correspond with the window section used.

Kicking plates and panels shall be 1,6mm metal plate fixed with standard metal glazing beads mitred at angles and countersunk screwed on at not exceeding 300mm centres with self-tapping screws.

Except where described as galvanized, windows, doors, burglar bars, etc shall be treated with one coat of primer complying with SANS 679 before leaving the factory.

C3.2.2Q

Where windows are described as fitted with burglar bars or flyscreens, these shall be standard type fitted over opening sashes.

The foregoing preambles "N.3 – ALUMINIUM" shall apply to aluminium windows, doors, etc in all respects in so far as they are applicable. Aluminium windows and doors shall be manufactured from extruded aluminium members of 6063-T6, 6261-T6 or 6082-T6 alloy and temper.

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Ancillary members such as sills, flashings, infill panels and the like formed from flat sheet material shall be of an appropriate alloy selected from 1200, 3004 or 5251 complying with BS 1470 of a temper suitable for the method of forming and a composition suitable for anodizing or painting as required.

Windows, doors, etc shall be of an approved standard system, manufactured by an approved firm experienced in this type of work, and shall meet with the minimum recommended performance requirements as set out by the Association of Architectural Aluminium Manufacturers of South Africa (AAAMSA) in the latest edition of the Selection Guide.

The fittings for all opening sashes shall be substantial and, unless otherwise described, shall be of high quality aluminium alloy finished to match the windows, doors, etc on which they occur. Samples of all fittings shall be supplied to the Principal Agent for approval.

Top, side and bottom hung opening sashes shall be hung on two aluminium hinges with 300 Series stainless steel pins, nylon bushes and stainless-steel washers. Side hung sashes shall have fasteners and sliding stays, top hung sashes shall have peg stays and bottom hung sashes shall have spring catches and concealed arms.

Projected out sashes shall have aluminium fasteners and concealed arms of a non-corrosive material compatible with aluminium.

The frames which are to be built into openings in brickwork shall be fitted with the manufacturer's standard type fixing lugs, not less than 20 x 3 x 150mm long, screwed to frame and placed one near each corner and intermediately not more than 450mm apart to sides, top and bottom and where fixed to concrete reveals, wood sub-frames or to pre-formed openings in brickwork shall have countersunk holes for screws, one near each corner and intermediately not more than 450mm apart to sides, top and bottom.

C3.2.4Q

Where so described, openings and sashes of windows and doors shall be fitted with approved channel section aluminium glazing beads sufficient in size and profile to suit the method of glazing employed, finished to match the windows, doors, etc and neatly mitred. Screws where necessary shall be of aluminium or 300 Series stainless steel and have pan or raised heads finished to match the beads.

C3.2.5Q

Windows, doors, etc described as "anodized" shall be treated with Grade 25 coating thickness. Windows, doors, etc described as "factory painted" shall have an electrostatically applied oven baked polyester paint coating not less than 25 micrometres thick.

C3.2.6Q

Aluminium windows, doors, etc shall include glass as described, fixing in position, sealing and protection against damage, deterioration or discolouration by taping with removable tape or covering with temporary casings or motor oil and removing same on completion.

Strongroom and record room doors shall not be built in as the work proceeds but shall be fixed later in the openings provided. The Contractor shall ensure that the lock or other important parts of the door are not tampered with. Should any such tampering occur, the Contractor will be held responsible and at the Principal Agent's discretion shall provide a new door or lock and keys at his

Contractor

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own expense. The keys shall not be delivered together with the doors to the building site. The Contractor shall arrange for the manufacturer to send the keys direct to the Principal Agent per registered post. If these instructions are not complied with, a new lock and keys shall be provided by the Contractor at his own expense.

Roller shutters shall be of approved manufacture comprising curtain, vertical channel guides and top mechanism. The curtain shall be constructed of 1mm thick machine-rolled galvanized interlocking slats with mild steel end locks spot welded to alternate strips. The bottom shall be provided with a galvanized rail riveted on and vertical edges shall slide in galvanized channel guides formed of steel not less than 2,5mm thick bolted to sides of openings.

The mechanism shall be covered in a galvanized sheet iron box. The ungalvanized sections shall be treated with one coat of primer complying with SANS 679 before leaving the factory.

Materials and workmanship shall comply with the following specifications and requirements:

| Material | SABS Specification | Grade of Class |
|-----------------------------|-----------------------|-------------------|
| Masonry cement | ENV 413-1 | MC12,5 |
| Lime for use in buildings | 523 | A2P |
| Sand for plaster and mortar | 1090 | - |

Surfaces shall be clean and free of oil and thoroughly wetted directly before any plastering or other in situ-finishes are commenced. Concrete surfaces shall be slushed with a mixture of one-part cement and one part coarse sand or otherwise treated to form a proper key. Preparatory coats shall be thoroughly scored and roughened to form a proper key.

All constituents shall be mixed by volume.

All coats of paving and plastering shall be executed in one operation without any blemishes.

Screeds shall be composed of one part cement and four parts sand.

Cement render shall be composed of one part cement and three parts sand finished with a steel trowel to a smooth polished surface and cured for at least seven days after laying.

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Cement render finish shall be divided into panels not exceeding 6 m² with V-joints and deep trowel cuts.

Granolithic shall be composed of one part cement, one part fine sand, two parts coarse sand and one part granite or other approved stone aggregate that will pass through a 5mm sieve, finished with a steel trowel to a smooth polished surface and cured for at least seven days after laying.

Coloured granolithic shall be carried out in two coats in one operation and shall be tinted to the required colour with approved colouring pigment mixed into the finishing coat. Under no circumstances is the pigment to be sprinkled on and trowelled in after the granolithic is laid.

Granolithic shall be divided into panels not exceeding 6 m² with V-joints and deep trowel cuts.

Skirtings shall not exceed 25mm thick and shall have a fair edge with arras or rounded external angle at top edge or V-joint to finish flush with plaster and coved or square junction with floor finish.

All plaster, other than skim plaster, shall be not less than 10mm and not more than 20mm thick.

Cement plaster shall be composed of one part cement and five parts sand.

Compo plaster shall be composed of one part cement, two parts lime and nine parts sand.

Gypsum skim plaster shall be pure gypsum plaster finished with a steel trowel.

Two coat plaster with gypsum finish shall comprise an undercoat composed of one part cement and five parts sand finished with a wooden float and a finishing coat of gypsum skim plaster.

Rough-cast plaster shall be applied in two coats. The undercoat shall be composed of one part cement and five parts sand finished with a wooden float. The finishing coat shall be composed of one part cement and three parts stone aggregate that will pass through a 4mm sieve. The finishing coat shall be flicked on with a machine before the undercoat has set to obtain an even texture.

Fine rough-cast plaster shall be as for rough-cast plaster, but the finishing coat shall be composed of one part cement and three parts coarse sand.

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Rates for plastering described as being on vertical surfaces of brickwork or blockwork shall include concrete columns, beams and lintels flush with the face of the wall.

Materials and workmanship shall comply with the following specifications and requirements:

| Material | SABS Specification | Grade of Class |
|--|--------------------------------------|-------------------|
| Glazed ceramic wall tiles and fittings | 22 | |
| Glazed and unglazed ceramic wall and floor tiles, fittings and bedding | 1449 | |
| Masonry cement | ENV 413-1 | MC 12,5 |
| Sand for plaster and mortar | 1090 | |
| | SABS Code of Practice | |
| The installation of ceramic tiling | 0107 | |

Tiles, mosaics, etc shall be even in shape and size, free from cracks, twists or blemishes and uniform in colour.

Surfaces shall be clean and free of oil and thoroughly wetted directly before any tiling is commenced. Concrete surfaces shall be slushed with a mixture of one part cement and one part coarse sand or otherwise treated to form a proper key.

Where tiles are fixed to plaster or screeds with an adhesive, the adhesive shall be as recommended by the manufacturer of the tiles. Joints shall be straight, continuous and flush pointed with an approved grouting compound.

Tiling described as "on walls" is on brick walls or block walls unless otherwise stated and shall include concrete columns, beams and lintels flush with the face of the wall.

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Contractor Witness 1 Witness 2 Employer Witness 1 Witness 2

Materials and workmanship shall comply with the following specifications and requirements:

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

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|---|---------------------------|---|-----------|
| Sheet metal | | BS Specification | |
| Sheet zinc | | 849 | |
| Sheet aluminium | | 1470 | |
| Sheet copper | | 2870 | |
| Rainwater systems | | SABS Specification | |
| Unplasticized polyvinyl chloride (UPVC) components for external rainwater systems | | 11 | |
| Pipes and fittings | SABS Specification | Class or type | |
| Steel pipes and fittings up to 150 mm nominal bore and suitable for screwing to ISO R7 pipe threads | 62 | Medium class, galvanized | |
| Copper tubes for domestic plumbing services | 460 | Class 1 – above ground | |
| | | Class 2 – under ground | |
| Hard drawn copper tubes | 460 | Class 0 – above ground | |
| Malleable cast iron pipe fittings | 509 | Galvanized | |
| Black polyethylene pressure pipes for cold water supply | 533 | – | |
| Cast iron fittings for fibre-cement pressure pipes | 546 | – | |
| Vitrified clay sewer pipes and fittings | 559 | – | |
| Reinforced concrete pressure pipes | 676 | – | |
| Concrete non-pressure pipes | 677 | SC Type; Class B | |
| Cast iron pipes and pipe fittings for use above ground in drainage installations | 746 | Type B pipes | |
| Unplasticized polyvinyl chloride (UPVC) sewer and drain pipes and pipe fittings | 791 | Normal duty, with socket and rubber ring type joint | |
| Fibre-cement pipes and fittings for drains | 819 | Class 3 | |
| Pipes and fittings | SABS Specification | Class or type | |
| Pitch-impregnated fibre pipes and fittings | 921 | Fittings shall be polypropylene | |
| Unplasticized polyvinyl chloride (UPVC) pressure pipes and fittings for cold water supply | 966 | – | |
| Unplasticized polyvinyl chloride (UPVC) soil, waste and vent pipes and pipe fittings for use above ground in drainage installations | 967 | – | |
| Rubber joint (non-cellular) rings for pipes | 974 | – | |
| Compression and capillary solder fittings for copper tubes | 1067 | – | |
| Fibre-cement pressure pipes and couplings | | | |
| Contractor | Witness 1 | Witness 2 | Employer |
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| Pipes and fittings | SABS Specification | Class or type |
|---|--------------------|---------------------------------|
| Pitch-impregnated fibre pipes and fittings | 921 | Fittings shall be polypropylene |
| Unplasticized polyvinyl chloride (UPVC) pressure pipes and fittings for cold water supply | 966 | — |
| Unplasticized polyvinyl chloride (UPVC) soil, waste and vent pipes and pipe fittings for use above ground in drainage installations | 967 | — |
| Rubber joint (non-cellular) rings for pipes | 974 | — |
| Compression and capillary solder fittings for copper tubes | 1067 | — |
| Fibre-cement pressure pipes and couplings (constant internal diameter type) | 1223 | — |
| Polypropylene pressure pipes | 1315 | — |
| Plastic and rubber traps | 1321 | — |
| Vent valves for drainage installations | 1532 | — |
| Pipes and fittings | BS Specification | |
| Heavy duty cast iron pipe fittings for drainage and gas and water supplies | 78 | |
| Lead pipes | 602 | |
| Cast iron pressure pipes for use in drainage and gas and water supplies | 1211 | |
| Stainless steel pipes for use with compression fittings | 4127 | |
| Sanitary fittings, etc. | SABS Specification | Remarks |
| Stainless steel sinks with draining boards (for domestic use) | 242 | — |
| Stainless steel wash hand basins | 906 | Each with two soap recesses |
| Stainless steel wash troughs | 906 | For installation against walls |
| Stainless steel sinks for institutional use | 907 | — |
| Stainless steel stall urinals | 924 | — |
| Sanitary fittings, etc | SABS Specification | Remarks |
| Acrylic resinous baths | 1402 | — |
| Glazed ceramic wash hand basins, sinks, washdown closet pans, urinals, cisterns and block channels | 497 | — |
| Hand operated W.C. flushing cisterns | 821 | — |
| Flushing devices for W.C. flushing cisterns | 1509 | — |
| Flush pipes for high level cisterns | 821 | Appendix X |
| Flush pipes for low level cisterns | 821 | — |

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Witness 2

| Taps, valves, etc. | SABS Specification | Class |
|--|--------------------------------------|---|
| Taps (metallic) | 226 | Pillar taps, mixer taps and stoptaps shall be Class 2 |
| Plastic water taps | 1021 | — |
| Single control mixer taps | 1480 | — |
| Float valves | 752 | — |
| Plastic ball floats for ball valves | 1006 | — |
| Functional control and safety valves | 198 | — |
| Cast iron gate valves | 664 | — |
| Automatic shut-off flush valves for water closets and urinals | 1240 | — |
| Check valves | 1551 | — |
| Portable rechargeable fire extinguishers | SABS Specification | |
| Dry powder | 810 | |
| Water | 889 | |
| Halogenated hydrocarbon | 1151 | |
| Other | SABS Specification | |
| Fixed electric storage water heaters | 151 | |
| Fire hose reels (with hose) | 543 | |
| Drainage covers, gratings, etc | SABS Specification | |
| Cast iron surface boxes and manhole and inspection covers and frames | 558 | |
| Cast iron gratings for gullies and stormwater drains | 1115 | |
| | BS Specification | |
| Cast iron step irons | 1247 | |
| | SABS Code of Practice | |
| The installation of polyethylene and unplasticized polyvinyl chloride pipes | 0112 | |
| Water supply and drainage for buildings | 0252 | |

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

C3.2.2.1T

Excavations shall be deemed to be in "earth". Backfilling to excavations shall be executed in 300mm thick layers, watered and compacted. Surplus excavated material shall be spread and levelled over site as directed.

C3.2.2.2T

Unreinforced concrete shall be Class B prescribed mix concrete and reinforced and precast concrete shall be Class C prescribed mix concrete.

C3.2.2.3T

Brickwork shall be of extra hard burnt bricks built in Class I mortar.

C3.2.2.4T

Plaster shall be 1:3 cement plaster finished smooth with a steel trowel. All angles shall be rounded.

C3.2.2.5T

Diameters stated for pipes, traps, valves, etc are internal diameters except PVC, polyethylene, stainless steel and copper pipes and traps for which external diameters are stated.

Q.3.1

Galvanized sheet iron shall be rolled steel sheet coated on both sides with Class C zinc coating complying with SANS 934. Sheets shall be free from white rust.

C3.2.4.5T

Galvanized sheet iron gutters shall have beaded edges and all joints shall be riveted and soldered. Angles shall be strengthened with 50 x 0,6mm galvanized sheet iron strips soldered on over the internal faces of mitres.

Gutters shall be fixed with falls to outlets on 30 x 3mm galvanized mild steel brackets, bent to the shape of gutters, with front ends taken up to the underside of beaded edge of gutter and each screwed to roof timbers or bolted to fibre-cement fascias with 6mm galvanized gutter bolts. Gutters shall be bolted to brackets at front with 6mm galvanized gutter bolts, one to each bracket.

Brackets shall be positioned at joints of gutters and intermediately at not exceeding 1,25 m centres.

C3.2.4.6T

Fibre-cement gutters shall have spigot and socket joints.

Gutters shall be fixed with falls to outlets on standard aluminium alloy brackets, screwed or bolted to roof timbers or fascias.

C3.2.4.7T

Gutters shall be fixed with falls to outlets on brackets as supplied by the manufacturer, screwed or bolted to roof timbers or fascias.

C3.2.4.8T

Aluminium gutters shall be roll formed on site to required lengths and profiles from 3003H14-3SH4

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

alloy strip not less than 0,7mm thick factory coated on both sides with baked enamel and two coats of silicone modified polyester to a total minimum thickness of 20 micrometres. Angles, stopped ends, etc shall be prefabricated units pop riveted to gutters with joints sealed with mastic. The guttering shall be in continuous lengths between angles, stopped ends, etc.

C3.2.5.1T

Galvanized sheet iron pipes shall have seams at the back and shall be jointed with soldered slip joints.

Pipes shall be fixed to walls, etc with galvanized mild steel holderbats spaced at not exceeding 2 m centres with tails driven in or cut and pinned in 1:3 cement mortar.

C3.2.5.2T

Fibre-cement pipes shall have spigot and socket joints.

Pipes shall be fixed to walls, etc with standard aluminium alloy holderbats with tails driven in or cut and pinned in 1:3 cement mortar.

C3.2.5.3T

Pipes shall be fixed to walls, etc with patented UPVC or aluminium clips and holderbats as supplied by the manufacturer of the pipe.

C3.2.5.4T

Aluminium pipes and fixing straps shall be formed from 3003H14-3SH4 alloy strip not less than 0,7mm thick factory coated on both sides as described for aluminium gutters.

Pipes shall be in continuous lengths with formed angles, offsets, shoes, etc.

Pipes shall be fixed to walls, etc with 20 x 0,6mm straps at not exceeding 1,5 m centres screwed to 25 x 75 x 100mm hardwood chamfered and oiled blocks plugged to walls.

In-situ concrete stormwater channels shall be constructed of unreinforced concrete with segmental channel formed in top. Channels shall be laid to falls on a well rammed earth bottom and finished smooth on exposed surfaces.

Precast concrete channels shall be of 25 MPa concrete, generally in 1 m lengths, finished smooth from the mould on exposed surfaces, laid to falls on a well rammed earth bottom, jointed in 1:3 cement mortar and pointed with keyed joints.

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

| Pipes | Joints |
|---|--|
| Fibre-cement, concrete, pitch-impregnated fibre and vitrified clay pipes for use underground in non-pressure pipe lines | Flexible joints in accordance with the manufacturer's caulking compound |
| Cast iron for use above ground | Spigot and socket joints with tarred rope yarn and caulking compound or Plain ended joints with stainless steel couplings with neoprene rubber sleeves |
| Cast iron for use below ground | Spigot and socket joints with tarred rope yarn and caulking compound |
| Galvanised mild steel | Joints of screwed galvanised steel sockets or bolted galvanised iron flanges Screwed joints with plastic jointing tape or hemp Flanged joints which shall be bolted and provided with rubber gaskets and with flanges screwed to pipes |
| Joints between pipes of different materials shall be as follows: | |
| Between cast iron and mild steel | Spigot and socket joints with tarred rope yarn and caulking compound |
| Between cast iron and clay | Spigot and socket joint with semi-dry cement caulking and 1:2 cement mortar fillet |
| Between mild steel or copper and clay | Spigot and socket joint with either bitumen or semi-dry cement caulking and 1:2 cement mortar fillet |

Q.8 FIXING OF PIPES

Pipes shall be fixed as follows:

| | |
|---|--|
| Q.8.1 Galvanised mild steel (except those stated in Q.8.3) | To walls with galvanised mild steel brackets for pipes not exceeding 80 mm diameter and with galvanised cast iron hinged holderbats with brass pins or bolts for pipes exceeding 80 mm diameter; both types with tails cut and pinned 1:3 cement mortar To woodwork with screw-on type galvanised mild steel holderbats |
| Q.8.2 Copper and stainless steel | To walls with brass holderbats or screw-on type two-piece spacing clips for pipes not exceeding 75 mm diameter and with purpose made holderbats for pipes exceeding 75 mm diameter; both types with tails cut and pinned in 1:3 cement mortar. To woodwork with screw-on type brass holderbats |
| Q.8.3 Cast iron and galvanised mild steel for soil, waste and vent pipes | To walls with hinged cast iron holderbats with brass bolts and with tails cut and pinned in 1:3 cement mortar To woodwork with screw-on type galvanised mild steel holderbats |
| Q.8.4 Polyethylene, polypropylene and patented UPVC or unplasticized polyvinyl chloride | To walls, woodwork, etc with aluminium clips and holderbats as supplied by the manufacturer of the pipes |
| Q.8.5 Fibre-cement | To walls with aluminium alloy holderbats with tails cut and pinned in 1:3 cement mortar |
| Q.8.6 Pipes fixed to ceilings | Fixed with holderbats and standard or purpose made hangers, with extended hangers for pipes to falls |

Witness 1

Witness 2

Joints of pipes not covered in SANS Specifications shall be as follows:

C3.2.8.1T

Water pipes, gas pipes, etc laid in ground shall be at least 400mm deep from the crown of the pipe to the finished surface.

C3.2.8.2T

Excavations taken out too deep shall be filled in with selected soil and compacted.

Backfilling to sides and up to 300mm above plastic pipes shall be free from stone or hard substances which will not pass a 10mm mesh.

Q.10 CLEANING EYE LIDS

Cleaning eye lids for drain pipe fittings shall be fixed and sealed as follows:

| Pipe fittings | Method of sealing and fixing |
|--|--|
| Fibre-cement | Sealed with synthetic rubber or bituminous mastic packing and fixed screws |
| Vitrified clay | Polypropylene lid sealed with synthetic rubber packing and pressed into position |
| Polypropylene and unplasticized polyvinyl chloride | Sealed with synthetic rubber packing and screwed on or pressed into position |
| Cast iron | Sealed with tallow or putty and fixed with non-ferrous metal screws |
| Galvanised malleable cast iron and cast brass | Sealed with synthetic rubber packing and screwed in |

Cleaning eyes shall consist of cast iron frames and lids with letters “CE” (or “SO”) cast in lids. The lids shall be secured with non-ferrous metal screws. Frames shall be jointed to vertical drain pipes. Cleaning eyes shall be encased in unreinforced concrete taken up to ground level and plastered on exposed surfaces.

Inspection eye marker slabs shall be 350 x 350 x 50mm thick precast concrete finished smooth from the mould, with letters “IE” (or “IO”) formed in top and placed flush in ground or paving.

Gulleys shall be built up of traps, vertical piping and gulley heads with loose gratings, all encased in unreinforced concrete to finish flush with gulley head top and taken up to at least 50mm above surrounding finished surfaces. The outer top edge of the concrete encasing shall be splayed and the exposed surfaces plastered.

Dished gulleys shall be built up of traps, vertical piping and gulley heads with loose gratings, all

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encased in unreinforced concrete and with dished unreinforced concrete hopper size 450 x 450mm overall around gulley head with rounded kerb 50mm wide to front and sides and 25mm wide at back, 100mm high above top of dishing and the hopper plastered on exposed surfaces. Top of hopper shall be taken up to at least 50mm above surrounding finished surfaces.

C3.2.13.1T

Rainwater sumps shall be built with half-brick sides on 100mm thick unreinforced concrete bottom, plastered internally on walls and with 80mm high unreinforced concrete kerb at top rebated for grating or cover and plastered on exposed surfaces.

C3.2.13.2T

Brick catchpits and inspection chambers shall be built with one-brick sides on 150mm thick unreinforced concrete bottom projecting 100mm beyond walls all round, plastered internally on walls and with 100mm thick reinforced concrete cover slab with opening rebated for frame of grating or cover and plastered on exposed surfaces.

Precast concrete catchpits and inspection chambers shall be constructed in accordance with the applicable details shown on Drawing LE-1 of SANS 1200LE. Precast concrete manhole sections and slabs shall comply with SANS 1294 and the requirements for pipes of SC type and Class A of SANS 677.

C3.2.13.3T

Brick inspection chambers shall be built as for brick stormwater inspection chambers and with the bottom of the chamber well benched around half round channels, bends, junctions, etc up to sides of chamber in unreinforced concrete finished smooth.

Precast concrete inspection chambers shall be constructed in accordance with the applicable details shown on Drawing LD-5 of SANS 1200LD. Precast concrete manhole sections and slabs shall comply with SANS 1294 and the requirements for pipes of SC type and Class A of SANS 677.

C3.2.13.4T

Junction boxes shall be formed of 150mm thick unreinforced concrete bottom and sides to suit the various sizes of the drain pipes and built after the pipes have been laid, with the sides taken up slightly higher than the highest pipe and finished level on top for and covered with a 75mm thick loose precast concrete slab.

C3.2.13.5T

Where inspection chambers exceed 1,2 m deep, cast iron step irons shall be provided, built into the wall at 300mm centres and staggered regularly in vertical rows spaced at 200mm centres horizontally.

Stopcock and meter boxes shall be built with half-brick sides with a cast iron box and lid complying with SANS 558 set in 75mm wide unreinforced concrete kerb for the full depth of the cast iron box and plastered on exposed surfaces.

Valve chambers shall be built with half-brick sides with 100mm thick unreinforced concrete kerb to

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top with rebate for cover and frame to finish flush with adjacent paving or finished ground level and plastered on exposed surfaces.

All cast iron covers, gratings, frames and surface boxes shall be coated with preservative solution. Frames shall be cast into concrete. Covers, except covers to stormwater drainage or electrical cable inspection chambers, shall be set in grease.

Concrete encasing for pipes, bends, traps, gulleys, grease traps, etc shall be unreinforced concrete not less than 100mm thick all round.

C3.2.18.1T

Glazed ceramic, acrylic and porcelain enamelled sanitary fittings and component parts shall be white. Accessories for sanitary fittings shall be chromium plated brass.

Waste outlets for baths, basins, etc shall comprise chromium plated brass waste union with grating, rubber washers and locknut, fitted with rubber or vulcanite plug on a chromium plated brass chain and stay.

C3.2.18.2T

Stainless steel sinks and draining boards, basins, wash troughs and urinals shall be AISI Type 304 satin finished stainless steel.

All stainless steel fittings shall be treated on the back with a vermin proof sound deadening coating.

Sinks, basins and wash troughs shall be provided with 40mm diameter screwed waste outlets.

C3.2.18.3T

Reinforced precast concrete wash troughs shall have a sloping front with ribbed rubbing surface and shall be finished smooth on exposed faces with top edges and inner angles rounded. Each compartment shall be fitted with a 40mm diameter waste outlet. Wash troughs shall each be supported on two reinforced precast concrete pedestals finished smooth on exposed faces.

C3.2.19.4T

Steel baths shall be porcelain enamelled internally and painted externally and fitted with waste outlet and overflow grating with coupling.

C3.2.19.5T

Acrylic resinous baths shall be fitted with waste outlet and overflow grating with coupling.

C3.2.19.6T

Acrylic resinous wash hand basins and vanity units shall have a smooth high gloss finish, with outlet openings, soap recesses, tap-holes and integral overflow and shall be fitted with waste outlet and overflow grating with coupling.

C3.2.19.7T

Sinks shall be provided with integral weir overflows.

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Washdown closet pans shall have washdown action and be provided with smooth finished injection moulded polypropylene heavy duty double flap seats fixed with non-ferrous bolts.

Urinal channels shall be provided with outlet gratings fitted in bitumen.

C3.2.19.8T

Flush pipes for high level cisterns shall be of plastic or drawn galvanized steel.

Flushpipes for low level cisterns shall be of plastic.

Flush and sparge pipes for urinals with high level cisterns shall be of chromium plated copper piping and of the sizes recommended by the manufacturer of the urinal.

Sanitary fittings shall be installed as follows:

C3.2.20.1T

Precast concrete wash troughs shall be bedded on top of pedestals which shall be bedded on floors in 1:3 cement mortar.

C3.2.20.2T

Stainless steel wash troughs and wash hand basins shall be fixed to walls on a pair of galvanized mild steel galleys brackets bolted to wall with 6mm diameter expanding bolts.

C3.2.20.3T

Acrylic resinous wash hand basins shall be fixed to walls on a pair of standard painted cast iron brackets screwed to underside of basin and bolted to wall with 6mm diameter expanding bolts.

C3.2.20.4T

Ceramic wash hand basins shall be fixed to walls on a pair of standard painted steel or cast iron brackets bolted to wall with 6mm diameter expanding bolts.

C3.2.20.5T

Acrylic resinous baths shall be bedded in 1:5 cement mortar on three cross rows of bricks or bedded solid on a layer of dry river sand and fixed to wall with galvanized steel brackets under edges (in the middle of the sides against walls) bolted to wall with 6mm diameter expanding bolts and sealed along top against wall finishes with patent mildew resistant silicone rubber.

C3.2.20.6T

Washdown closet pans shall be bedded on floors in 1:3 cement mortar. Cisterns shall be fixed to walls with 6mm diameter expanding bolts.

C3.2.20.7T

Ceramic stall and slab urinals shall be bedded on floors and against walls in 1:3 cement mortar. Slabs, channels, treads, etc shall be jointed in 1:3 cement mortar and pointed in white cement.

Ceramic bowl urinals shall be fixed to walls on standard steel brackets bolted to wall with 6mm diameter expanding bolts. Cisterns shall be fixed to walls on standard brackets bolted to wall with 6mm diameter expanding bolts.

C3.2.20.8T

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Stainless steel stall and slab urinals shall be bedded on floors in 1:3 cement mortar and with backs and sides against walls filled in with fine unreinforced concrete. Cisterns shall be fixed as cisterns for ceramic urinals.

Fire hose reels shall each be fitted with a 30 m long hose of internal diameter not less than 19mm with a 4,8mm internal diameter chromium plated brass nozzle.

All fire extinguishers shall be fully charged.

Sewerage pipe lines, sanitary plumbing including fittings and hot and cold water supply and fire service shall be tested to the approval of the Principal Agent and Local Authority.

The Contractor shall provide all testing apparatus, material and labour required for the tests and inspections.

Materials and workmanship shall comply with the following specifications and requirements:

| Material | SABS Specification | Grade of Class |
|--|--------------------------------------|-------------------|
| Glazing putty | 680 | - |
| Silvered glass mirrors | 1236 | A |
| Safety and security glazing materials | 1263 | - |
| Silicone-rubber-base sealing compounds | 1305 | - |
| | CKS Specification | |
| Glass for glazing | 55 | |
| | BS Specification | |
| Glass | 952 | |
| | SABS Code of Practice | |
| Installation of glazing materials in buildings | 0137 | |

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Witness 2

Glazing putty shall be Type I for wooden sashes and Type II for steel sashes. Putty for glazing to unpainted hardwood shall be tinted to match the colour of the wood.

Back putty shall not exceed 3mm thick. Putty shall not be painted until it has formed a surface crust, and if the putty does not form a surface crust it shall be replaced.

Butyl putty shall be used where glass is to be fixed in aluminium sashes with glazing beads.

Non-setting compounds shall be used where laminated glass is fixed in sashes with glazing beads

Materials shall comply with the following specifications and requirements:

| Material | SABS Specification | Grade or Type |
|---|--------------------|---------------|
| Matt or eggshell decorative paint for internal works | 515 | - |
| Decorative high gloss enamel paint for internal and exterior work | 630 | Grade I |
| Primers for wood for external work | 678 | Type I |
| Primers for wood for internal work | 678 | Type III |
| Zinc chromate primers for steel | 679 | Type I |
| Undercoats for paints (except emulsion paint) | 681 | Type I |
| Aluminium paint | 682 | Grade II |
| Roof paints | 683 | Type B |
| Structural steel paint | 684 | Type B |
| Wash primer (metal etch primer) | 723 | - |
| Varnish for interior use | 887 | Type I |
| Calcium plumbate primer | 912 | - |
| Emulsion paints | 1586 | - |

C3.2.2.1V

Plastered surfaces shall be thoroughly inspected and, if necessary, washed down and brushed in order to remove any traces of efflorescence and allowed to dry completely before any paint finish is applied. Before any paint is applied, holes, cracks and irregularities in plaster and other surfaces shall be filled with a suitable filler and finished smooth. Unfinished concrete surfaces shall have all

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

projections rubbed off and shall be thoroughly cleaned with a spirits-of-salts solution (1 part concentrated spirits-of-salts to 4 parts water).

C3.2.2.2V

Metal surfaces shall be sanded, where necessary, washed with a suitable cleaning agent and left smooth.

Protective coatings applied by manufacturers to galvanized metal surfaces shall be removed with a suitable agent and the surfaces washed down.

Rust, grease and defective factory primers on metal surfaces, as well as pitch on cast iron pipes, shall be removed.

C3.2.2.3V

Knots in woodwork shall be treated with knotting. Minor blemishes shall be filled with a suitable filler. Wood surfaces shall be sanded smooth.

Primers to wood surfaces shall be applied by brush. Primers to other surfaces may be applied by roller with the approval of the Principal Agent. Undercoats and finishing coats may be applied by brush or roller.

Paint shall not be sprayed on except in the case of cellulose and other special paints where spray painting is the accepted method of application.

Before subsequent coats of paint are applied the previous coat shall be properly dry and shall be sanded down where necessary.

A colour scheme comprising colours and the blending of colours approved by the Principal Agent shall be used for the paintwork. The tints of the undercoats shall closely match the finishing coat but nevertheless differ sufficiently to indicate the number of undercoats. Colour samples of the finishing coats shall be provided in all cases.

Paintwork shall include the preparation of surfaces, filling, stopping, sanding and priming of nail heads and screws.

Where windows, sashes, etc are to be painted, the rebates of the openings to be glazed shall be

The Contractor shall be responsible for carrying out all necessary process control tests on the density and moisture content of the compacted sub-grade, base course, etc to ensure that the required compaction is being attained.

C3.2.7 V

Materials and workmanship shall comply with the following specifications and requirements :

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

| Material | SABS Specification |
|---|-------------------------------|
| Straining eye bolts, hinge bolts, bolts, nuts etc | 135 |
| Treated timber posts, stays and droppers | 457 |
| Galvanised fencing wire (plain and barbed) | 675 |
| Steel washers | 1149 |
| Prefabricated concrete components for fencing | 1372 |
| Galvanised and plastic coated chainlink fencing and its wire accessories | 1373 |
| | CKS Specification |
| Anti-intruder fences | 451 |
| Metal droppers and standards | 451 |

C3.2.8V

All galvanized wire shall be zinc coated wire with Class B zinc coating. Straining wire shall be 4mm diameter galvanized mild steel wire. Tie wire shall be 1,6mm diameter galvanized mild steel wire.

C3.2.9V

Plastic coated straining wire shall be 3,15mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 3,95mm.

Plastic coated tie wire shall be 1,8mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 2,5mm.

C3.2.10V

Galvanized barbed wire shall be 2,5mm diameter mild steel double strand reverse twist zinc coated barbed wire with Class A zinc coating.

C3.2.11V

Galvanized wire mesh shall be 50mm mesh chain link netting of 2,5mm diameter Class C galvanized mild steel wire.

C3.2.12V

Plastic coated wire mesh shall be 50mm mesh chain link netting of 2,5mm diameter Class C galvanized mild steel wire plastic coated to an overall diameter of 3,25mm.

C3.2.13V

Galvanized welded wire mesh shall be fabricated from pre-galvanized wires to rectangular pattern welded together at each intersection using a welding method which forms a zinc oxide protective coating at each intersection.

C3.2.14V

Razor wire shall be fabricated from 2,5mm diameter galvanized high tensile steel wire fitted with razor barbs formed of 0,5mm galvanized steel strip clipped on at 37,5mm centres.

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

C3.2.15V

Droppers shall be of ridged T section mild steel with a mass of not less than 0,55 kg/m. Standards shall be of I section mild steel with a mass of not less than 3 kg/m or of ridged edge Y section mild steel with a mass of not less than 2,5 kg/m, and shall be driven 600mm deep into the ground.

Droppers and standards shall have either galvanized, sprayed metal or painted finish as described in the items and in accordance with CKS 451. In addition, those surfaces of standards embedded in the ground shall be coated with bitumen.

C3.2.16V

Posts and stays shall comply with CKS 451 and shall be of black galvanized mild steel tubing as specified.

Straining posts shall be of 108mm outside diameter x 3mm wall thickness tubing, each with a 300 x 300 x 5mm thick mild steel sole plate and a steel cap welded on.

Intermediate posts shall be of 50mm outside diameter x 2,5mm wall thickness tubing, each with a 230 x 230 x 5mm thick mild steel sole plate and a steel cap welded on.

Stays for straining posts shall be of 50mm outside diameter x 2,5mm wall thickness tubing, each with a 230 x 230 x 5mm thick mild steel sole plate welded on and fixed raking with top end flattened, bent, holed and bolted to straining post with and including a 5mm diameter galvanized mild steel bolt with nut and washer.

Posts and stays shall have either galvanized or painted finish as described in the items and in accordance with CKS 451. In addition, sole plates and portions of posts and stays embedded in ground shall be coated with bitumen.

C3.2.17V

Timber posts shall be 125mm diameter, timber stays shall be 100mm diameter and timber droppers shall be 30mm diameter.

C3.2.18V

Prestressed concrete posts and stays shall be finished smooth from the mould and uniformly stressed by means of high tensile longitudinal prestressing wires with concrete cover to wires of not less than 20mm.

Corner and straining posts shall be 100 x 100mm and intermediate posts and stays shall be 75 x 75mm. Stays shall be fixed raking with top end splayed and glued to posts with a suitable epoxy compound.

C3.2.19V

Straining eye bolts, hinge bolts, bolts, nuts and washers shall be galvanized.

C3.2.20V

Precast concrete fencing over sloping terrain shall be stepped to suit terrain, including the use of increased lengths of posts as necessary, excavation, etc.

C3.2.21V

Bases in ground for posts, stays, etc shall be of Class B prescribed mix concrete with tops 100mm below surface of ground.

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Sizes of concrete bases for posts, stays, etc shall be as follows:

Straining and gate posts – 450 x 450 x 700mm deep
Intermediate posts – 300 x 300 x 600mm deep
Stays – 600 x 300 x 500mm deep

C3.2.22V

Where fencing is described as having a security overhang, the posts and standards shall have angular (single arm) extension arms.

Extension arms shall be attached to the posts and standards by welding in the case of steel and by spiking in the case of timber.

Concrete extension arms shall be cast integrally with the post or standard.

Barbed wire to security overhangs shall be tightly strained and wired at each intersection with extension arms and shall have barbed wire braces at 450mm centres between standards, posts, etc, wired onto the barbed wire and the top straining wire.

C3.2.23V

Gates shall be formed of 40mm outside diameter x 2,5mm wall thickness mild steel tubular framework with welded joints, strongly braced as necessary and filled in with wire mesh as described above, properly strained and securely bound to framework with tie wire.

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Eligibility

The electrical sub-contractors shall also be registered with The Department of Labour. The company shall have a registered electrical installer for single phase installations.

PART 2: GENERAL SPECIFICATION FOR ELECTRICAL WORK

CONTENTS

- 1 TESTS
- 2 MAINTENANCE OF INSTALLATIONS
- 3 REGULATIONS
- 4 NOTICES AND FEES
- 5 SCHEDULE OF FITTINGS AND EQUIPMENT
- 6 QUALITY OF MATERIALS
- 7 WORKMANSHIP AND STAFF
- 8 CERTIFICATE OF COMPLIANCE
- 9 CABLE SLEEVE PIPES
- 10 DRAWINGS
- 11 BALANCING OF LOAD
- 12 MAINTENANCE OF ELECTRICAL SUPPLY
- 1 TESTS

After completion of the works and before first delivery is taken, a full test will be carried out on the installation for a period of sufficient duration to determine the satisfactory working thereof. During this period the installations will be inspected and the Contractor shall make good, to the satisfaction of the Engineer, any defects which may arise.

The Contractor shall provide all instruments and equipment required for testing and any water, power and fuel required for the commissioning and testing of the installations at completion.

2 MAINTENANCE OF INSTALLATIONS

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

With effect from the date of the First Delivery Certificate the Contractor shall at his own expense undertake the regular servicing of the installation during the maintenance period and shall make all adjustments necessary for the correct operation thereof.

If during the said period the installations is not in working order for any reason for which the Contractor is responsible, or if the installations develops defects, he shall immediately upon being notified thereof take steps to remedy the defects and make any necessary adjustments.

Should such stoppages however be so frequent as to become troublesome, or should the installations otherwise prove unsatisfactory during the said period the Contractor shall, if called upon by the Engineer, at his own expense replace the whole of the installations or such parts thereof as the Engineer may deem necessary with apparatus specified by the Engineer.

3 REGULATIONS

The installation shall be erected and tested in accordance with the Acts and Regulations as indicated in the scope of works

4 NOTICES AND FEES

The Contractor shall give all notices required by and pay all necessary fees, including any inspection fees, which may be due to the local Supply Authority.

On production of the official account, only the net amount of the fee charged by the Supply Authority for connection of the installation to the supply mains, will be refunded to the Contractor by the Client.

The Contractor shall issue all notices and make the necessary arrangements with Supply Authorities, Eskom and other authorities as may be required with respect to the installation.

5 SCHEDULE OF FITTINGS AND EQUIPMENT

In all instances where schedule of light, socket outlet and power points are attached to or included on the drawings, these schedules are to be regarded as forming part of the specification.

All equipment and fittings supplied must be in accordance with the appended specification, suitable for the relevant supply voltage and frequency and must be approved by the Engineer.

6 QUALITY OF MATERIALS

Only materials of first class quality shall be used and all materials shall be subject to the approval of the Engineer.

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

Wherever applicable the material is to comply with the relevant South African Bureau of Standards, specifications, or to British Standard Specifications, where no SABS Specifications exist.

Materials wherever possible, must be of South African manufacture.

7 WORKMANSHIP AND STAFF

An accredited person shall exercise general control over all electrical installation work being carried out.

The workmanship shall be of the highest grade and to the satisfaction of the Client.

All inferior work shall, on indication by the Engineer, immediately be removed and rectified by and at the expense of the Contractor.

8 CERTIFICATES OF COMPLIANCE

On completion of the service, a certificate of compliance must be issued to the Engineer and the Client in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993).

9 CABLE SLEEVE PIPES

Where cables cross under roadways, other services and where cables enter buildings, the cables shall be installed in asbestos-cement pipes, earthenware or high-density polyethylene pipes.

The ends of all sleeves shall be sealed with a non-hardening watertight compound after the installation of cables. All sleeves intended for future use shall likewise be sealed.

10 DRAWINGS

The drawings generally show the scope and extent of the proposed work and shall not be held as showing every minute detail of the work to be executed.

The position of power points, switches and light points that may be influenced by built-in furniture must be established on site, prior to these items being built in.

11 BALANCING OF LOAD

The Contractor is required to balance the load as equally as possible over the multiphase supply.

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

12 MAINTENANCE OF ELECTRICAL SUPPLY

All interruptions of the electrical supply that may be necessary for the execution of the work, will be subject to prior arrangement between the Contractor, Engineer, user Client (Beneficiaries, the Local Municipality/Eskom).

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

1 GENERAL

1.1 This part of the specification should be read in conjunction with the Bills of Quantities and drawings as listed in this specification.

1.2 The latest edition, including all amendments up to date of tender of the following RSA specifications, publications and codes of practice shall be read in conjunction with this specification and shall be deemed to form part thereof:

1.2.1 Occupational Health and Safety Act of 1993

1.2.2 SANS 10142-1 – Wiring of premises

1.2.3 SABS 0400 – Building regulations

1.2.4 SABS 0313 – Earthing of structures

1.2.5 The standard specification as Part I of this document

1.2.6 Manufacturer's specifications and installation instructions

1.2.7 The Contractor shall ensure that all safety regulations and measures are applied and enforced during construction, refurbishment, repair and maintenance work on cabling, wiring, distribution boards, luminaires and power outlets.

1.2.8 Applicable SANS specifications and requirements with respect to installation of electrical material and workmanship.

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

PART 4: BILLS OF QUANTITIES

PREAMBLE

TYPICAL ITEMS/PREAMBLES TO BE INSERTED IN THE BILLS OF QUANTITIES

1. The descriptions in these bills of quantities shall be read in conjunction with the specification.
2. The unit rate for each item in the Bills of Quantities shall include for all materials, labour, profit, transport, etc., everything necessary for the execution and complete installation of the work in accordance with the description.
3. The Bills of Quantities shall not be used for ordering purposes. The Contractor shall check the lengths of cables and overhead conductors on site before ordering any of the cables. Any allowance for off-cuts shall be made in the unit rates.
4. The rates shall exclude Value-Added Tax and the total carried over to the final summary.
5. All material covered by this Specification shall, wherever possible, be of South African manufacture.

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

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Drawings Prepared by Contractor

Drawings Prepared by the Employer

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

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Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

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The Preference Points Scoring system will be applied as indicated in Part T.2.2.8

It is the requirement of the Contract that a Community Liaison Officer (CLO) be appointed by the Contractor. The primary functions of the CLO shall be to assist the Contractor with the selection and recruitment of targeted labour, to represent the community in matters concerning the use of targeted labour (and/or enterprises) on the works, and to assist with the communication between the Contractor, the Client and the local community.

The Contractor shall appoint the CLO as per the recruitment method approved by the Employer. The candidates must have a minimum of Grade 12 qualification with the ability to read and write. The candidates should reside in the community of Mzinti, Nkomazi Local Municipality.

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Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

The standard specifications on which this contract is based are the

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

The Contractor is required to commence with execution of the Works within 14 days from the date of handover.

The programme shall include details of anticipated monthly expenditures based on the programme and shall be in the form of a bar chart with a calendar week as the time scale. The programme shall itemise key construction activities and indicate their duration, weekly production rates and their relation to other activities thereby defining a critical path to the Due Completion Date. The monthly expenditures shall be the net value of construction and shall not include contingencies and VAT.

The programme shall make allowance for all gazetted holidays, builder's break and rain. The Contractor shall table an updated copy of the approved programme at each site meeting clearly indicating the actual progress versus the scheduled progress.

Measurements will be done continuously between the Client's Representatives and the Contractor on dates and time agreed on. These parties must arrange dates.

The progress of the following items will be recorded hereunder:

The contractor will provide a concept with quantities to the Client. If any material on site is claimed, proof of ownership must be provided either by means of the necessary receipts or a letter from the supplier stating that ownership has been transferred to the contractor upon delivery.

After the payment certificate has been approved by the Client, the contractor must issue a VAT invoice. The certificate will then be ready for handing in.

Payment certificates must be completed monthly and submitted before each site meeting, to ensure that percentage progress can be ready for the site meeting each month.

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Contractor

Witness 1

Witness 2

Employer

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

This specification covers the principles, duties, responsibilities, liabilities, and requirements applicable in respect of health and safety in the work place on construction work.

This document constitutes the Employers' Health and Safety Specification as defined in the Construction Regulations, 2003 of the Occupational Health and Safety Act (Act 85 of 1993).

This specification applies to tunnelling although the minimum requirements for tunnelling are contained in the Mines Health and Safety Act. This specification however does not apply to underground construction at this point in time as covered by the Mines Health and Safety Act, 1996 (Act 29 of 1996) as amended.

Some of the terms and requirements of the Occupational Health and Safety Act and its Regulations may be novel to Contractors. This specification has therefore been prepared as an instructive guideline without being prescriptive, constraining the competitive advantage or interfering with the legal obligations of the responding parties.

The Health and Safety Plan required in terms of this specification may also be novel to Contractors. This specification has therefore been prepared in such a way to allow Contractors to employ the services of specialist consultants for the preparation and implementation of the same during the construction of the Works.

Health and safety can only be assured on construction works if all stakeholders buy into the Health and Safety plan and when the health and safety of all is an integrated line accountability of all management staff and workers on site. The management systems that are provided for in this specification is to enable the performance statistics of health and safety to be regularly captured, the intention of these systems is not to achieve health and safety by policing the conduct of the Contractor's employees.

In addition to ensuring health and safety, the intention of the management system is rather to commercially exploit the benefit of doing things right the first time that goes hand in hand with top health and safety performance. Accidents and injuries never pay. The loss of production and the cost of injuries, however, relatively infrequent they may be, far outweigh the effort required to maintain top health and safety on construction.

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

The specification accordingly provides for:

- a) Independent periodic audits to ensure an unbiased pursuit of health and safety,
- b) Follow-up audits to ensure the implementation of prescribed remedial actions,
- c) The review of the efficiency and effectiveness of the Contractor's Health and Safety Plan,
- d) The preparation of regular reports of inspections and accidents to enable the tracking of changes in health and safety performance,
- e) The monitoring of conditions on a continuously pro-active basis to ensure that hazards are without delay identified, assessed and remedied should it threaten the health and safety of persons and property,
- f) Ad hoc inspections to ensure that health and safety is pursued with dedication and not out of intimidation or coercion, and
- g) Development of all aspects of the Contractor's Health and Safety Plan.

The fundamental intention of this specification is that the preservation of health and safety will become a core value of all involved during the construction of the Works.

This Specification does not require the preparation of an unduly extensive or complex risk assessment. The Contractor should rather prepare a risk assessment which takes the size of the project, the size of the Contractor's organization, the conditions of the workplace and the nature, complexity and significance of the hazards likely to be encountered during the execution of the Works into account.

Where this specification is required for a project, the following specifications (as amended) shall, inter alia, form part of the contract document:

- a) Occupational Health and Safety Act, 1993, and its regulations which shall include, but shall not be limited to the following:

Construction Regulations, 2003,
General Safety Regulations,
General Administrative Regulations, 1996,
Driven Machinery Regulations, 1988,
Electrical Installation Regulations, 1992,
Electrical Machinery Regulations, 1988,
Environmental Regulations for Workplaces, 1987, and
Facilities Regulations, 1990.

- b) Clauses 4.5.2, 4.6, 4.7 and 4.8 of the Contract Data.

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

This specification contains clauses that are applicable to the occupational health and safety requirements of the Occupational Health and Safety Act, 1993 and its Regulations, in particular the Construction Regulations, 2003 promulgated on 18 July 2003 in terms of Section 43 of the Act.

In the Contract (as defined in clause 1.(1)(e) of the Conditions of Contract) the following words and expressions shall have the meanings hereby assigned to them except where the context otherwise requires:

- (a) "Assistant Construction Supervisor" means a competent person appointed in accordance with regulation 6.(2) of the Construction Regulations, 2003, in writing by the Contractor, with written notification to the Engineer.
- (b) "Batch Plant Supervisor" means a competent person appointed in accordance with regulation 18.(1) of the Construction Regulations, 2003, in writing by the Contractor, with written notification to the Engineer.
- (c) "Construction Health and Safety Officer" means a competent person appointed in accordance with regulation 6.(6) of the Construction Regulations, 2003, in writing by the Contractor, with written notification to the Engineer.
- (d) "Construction Supervisor" means a competent person appointed on a full-time basis in accordance with regulation 6.(1) of the Construction Regulations, 2003, in writing by the Contractor, with written notification to the Engineer.
- (e) "Construction Vehicles & Mobile Plant Inspector" means a competent person appointed in accordance with regulation 21.(1)(j) of the Construction Regulations, 2003, in writing by the Contractor, with written notification to the Engineer.
- (f) "Contractor" means the natural or juristic person or partnership whose tender has been accepted by or on behalf of the Employer and, who is defined as the Principal Contractor in the Construction Regulations, 2003.
- (g) "Demolition Work Supervisor" means a competent person appointed in accordance with regulation 12.(1) of the Construction Regulations, 2003, in writing by the Contractor with written notification to the Engineer.
- (h) "Employer's Designer" means the natural or juristic person or partnership named in the Appendix to Tender or any other natural or juristic person or partnership appointed from time to time by the Employer for the design of the portion of the Permanent Works which the Employer is responsible to design in terms of this Contract.
- (i) "Contractor's Designer" means the natural or juristic person or partnership appointed from time to time by the Contractor and notified in writing to the Engineer and Employer for the design of the portion of the Permanent Works which the Contractor is responsible to design in terms of this Contract, and for the design of the Temporary Works.
- (j) "Electrical Temporary Installation Inspector" means a competent person appointed in accordance with regulation 22.(d) of the Construction Regulations, 2003, in writing by

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

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- the Contractor, with written notification to the Engineer.
- (k) “Employer” means the natural or juristic person or partnership for whom the Works are to be executed, who is named as the Employer in the Conditions of Contract and who is known as the “Client”, in the Occupational Health and Safety Act, 1993 and its regulations.
 - (l) “Engineer” means the natural or juristic person or partnership named as the Engineer in the Conditions of Contract and appointed by the Employer to act as the Engineer in terms of this Contract.
 - (m) “Engineer’s Representative” means the person appointed by the Engineer in terms of Clause 2 of the Conditions of Contract.
 - (n) “Excavation Work Supervisor” means a competent person appointed in accordance with regulation 11.(1) of the Construction Regulations, 2003, in writing by the Contractor, with written notification to the Engineer.
 - (o) “Explosive Powered Tools Issuer” means a competent person appointed in accordance with regulation 19.(2)(g)(i) of the Construction Regulations, 2003, in writing by the Contractor, with written notification to the Engineer.
 - (p) “Fall Protection Developer” means a competent person appointed in accordance with regulation 8.(1)(a) of the Construction Regulations, 2003, in writing by the Contractor, with written notification to the Engineer.
 - (q) “Fire Extinguisher Inspector” means a competent person appointed in accordance with regulation 27.(h) of the Construction Regulations, 2003, in writing by the Contractor, with written notification to the Engineer.
 - (r) “Formwork and Support Work Supervisor” means a competent person appointed in accordance with regulation 15.(1) of the Construction Regulations, 2003, in writing by the Contractor, with written notification to the Engineer.
 - (s) “Hazard” means any object, action or condition that can potentially harm the health and safety of persons or property.
 - (t) “Hazard Identification” means the identification and documenting of existing or expected hazards.
 - (u) “Health and Safety Consultant” means the natural or juristic person or partnership appointed by the Contractor to assist in any matters related to health and safety on the construction site.
 - (v) “Health and Safety Plan” means a documented plan, prepared by the Contractor, of work procedures to mitigate, reduce or control hazards identified.
 - (w) “Health and Safety Specification” means a documented specification of all health and safety requirements and criteria to mitigate, reduce or control hazards identified.
 - (x) “Health and Safety Representative” means the person/s designated in accordance with section 17 of the Occupational Health and Safety Act.
 - (y) “Ladder Inspector” means a competent person appointed in accordance with regulation 13 of the General Safety Regulations, in writing by the Contractor, with written notification to the Engineer.
 - (z) “Material Hoist Inspector” means a competent person appointed in accordance with regulation 17.(8)(a) of the Construction Regulations, 2003 in writing by the Contractor, with written notification to the Engineer.
 - (aa) “Method Statement” means a document detailing the key activities to mitigate, reduce or

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- control hazards identified.
- (bb) “Professional Engineer” means any person employed from time to time by either the Employer or Contractor who holds registration as either a Professional Engineer or Professional Certificated Engineer under the Engineering Profession Act, 2000 (Act No. 46 of 2000).
 - (cc) “Professional Technologist” means any person employed from time to time by either the Employer or Contractor who holds registration as a Professional Technologist under the Engineering Profession Act, 2000 (Act No. 46 of 2000).
 - (dd) “Risk” means the likely occurrence and impact of a hazard.
 - (ee) “Risk Assessment” means a programme carried out to identify and evaluate the likely occurrence and impact of all hazards.
 - (ff) “Risk Assessor” means a competent person appointed in accordance with regulation 7.(1) of the Construction Regulations, 2003, in writing by the Contractor, with written notification to the Engineer.
 - (gg) “Safety Agent” means a competent natural or juristic person or partnership named in the Appendix to Tender or any other person appointed from time to time by the Employer and notified in writing to the Contractor to act on behalf of the Employer for the purposes of this specification.
 - (hh) “Scaffolding Supervisor” means a competent person appointed in accordance with regulation 14.(2) of the Construction Regulations, 2003, in writing by the Contractor, with written notification to the Engineer.
 - (ii) “Stacking Supervisor” means a competent person appointed in accordance with regulation 26.(a) of the Construction Regulations, 2003, in writing by the Contractor, with written notification to the Engineer.
 - (jj) “Subcontractor” means the natural or juristic person or partnership who is appointed by the Contractor with prior consent of the Engineer to execute certain tasks associated with the Works and who is also an employer as defined in section 1 of the Occupational Health and Safety Act.
 - (kk) “Suspended Platforms Supervisor” means a competent person appointed in accordance with regulation 15.(1) of the Construction Regulations, 2003, in writing by the Contractor, with written notification to the Engineer.

2.4.1 Principal Parties

This section covers the duties, responsibilities and liabilities of the following principal parties:

Employer
Employer’s Safety Agent
Contractor
Subcontractor
Employer’s Designer
Contractor’s Designer

The duties and responsibilities of the various principal parties are briefly summarized below (the numbers indicated correspond to the applicable regulation number in the Construction

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

Regulations, 2003). The intention of the summary is not to replace the Regulations, but is included for indicative purposes. The liabilities of each party are also shown.

a) Employer

In addition to the duties, responsibilities and liabilities specified in the Conditions of Contract, the Employer shall have the following duties and responsibilities to ensure compliance with the Construction Regulations, 2003:

- 4.(1)(a) Prepare health and safety specifications for the Works.
- 4.(1)(a) Provide copies of the specifications to Tenderers or to the appointed Contractor.
- 4.(1)(b) Provide any information to the Contractor that may affect the health and safety of his employees.
- 4.(1)(c) Appoint the Contractor in writing for the Works.
- 4.(1)(d) Take reasonable steps to ensure that the Contractor's Health and Safety Plan is implemented and maintained on the Works (which shall include monthly audits).
- 4.(1)(e) Stop the Contractor from executing work, not in accordance with, his Health and Safety Plan or which poses a threat to the health and safety of persons.
- 4.(1)(f) Ensure that sufficient health and safety information and appropriate resources are made available to the Contractor when changes are brought about to the design.
- 4.(1)(g) Ensure that the Contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to the commencement of the Works.
- 4.(1)(h) Ensure that Tenderers have made provision in their tenders for the cost of health and safety measures during the construction of the Works.
- 4.(2) Discuss and negotiate the contents of the Contractor's Health and Safety Plan.
- 4.(2) Approve the Contractor's Health and Safety Plan for implementation.
- 4.(3) On request, make available copies of the Contractor's Health and Safety Plan to his employees, his Subcontractors and inspectors.
- 4.(4) Satisfy himself on the competencies and resources of the Contractor he intends appointing.
- 4.(6) Satisfy himself on the competencies and resources of his Safety Agent should he decide to appoint one.

In terms of Clause 4.6 of the Contract Data, the Contractor accepts sole liability as mandatory for due compliance with the Occupational Health and Safety Act, 1993 and all its regulations including the Construction Regulations, 2003. The Employer will only be responsible for the duties imposed on the Employer in terms of the Construction Regulations, 2003 as listed above.

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

b) Employer's Safety Agent

Where the Employer decides to appoint an agent in accordance with regulation 4.(5) of the Construction Regulations, 2003, the duties and responsibilities as imposed by these regulations upon the Employer shall as far as reasonably practicable apply to his Safety Agent.

c) Contractor

In addition to the duties, responsibilities and liabilities specified in the Conditions of Contract, the Contractor shall have the following duties and responsibilities to ensure compliance with the Construction Regulations, 2003:

- 3.(1)(a) Notify the provincial director in writing of the commencement of the construction works.
- 3.(3) Ensure that a copy of the notification letter is kept on site for inspection on request as well as proof of its receipt by the Department of Labour.
- 5.(1) Demonstrate a Health and Safety Plan, based on the Employer's health and safety specifications.
- 5.(1) Apply the Health and Safety Plan from the Commencement Date until completion of the Works.
- 5.(2) Ensure co-operation between all contractors to enable each to comply with the provisions of Construction Regulations.
- 5.(3)(a) Provide any Tenderer or Subcontractor with copies of the Employer's health and safety specifications.
- 5.(3)(b) Appoint Subcontractors in writing.
- 5.(3)(c) Ensure that each Subcontractor's Health and Safety Management Plan is implemented and maintained on their portion of the Works.
- 5.(3)(d) Stop any Subcontractor from executing Works, not in accordance with, the Contractor's Health and Safety Plan or which poses a threat to the health and safety of persons.
- 5.(3)(e) Ensure that sufficient health and safety information and appropriate resources are made available where applicable, to the Subcontractor when changes are brought about to the design of the Works.
- 5.(3)(f) Ensure that his Subcontractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to the commencement of the Works.
- 5.(3)(g) Ensure that his Tenderers have made provision in their tenders for the cost of health and safety measures during the construction of the Works in line with the requirements of the Employers Health and Safety Specification and his Health and Safety Management Plan.
- 5.(5) Discuss and negotiate the contents of his Subcontractor's Health and Safety Plan, to ensure compliance with the Employer's Health and Safety Specification and consistent with the Contractors Health and Safety Management Plan.

Contractor

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Employer

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- 5.(5) Approve his Subcontractor's Health and Safety Plan for implementation and to keep records of all such approvals on site for auditing purposes.
 - 5.(6) On request, make available a copy of his and his Subcontractor's Health and Safety Plan to an employee, inspector, contractor, the Employer or the Employer's Safety Agent.
 - 5.(7) Open and maintain a record management system regarding health and safety for the Contractors own and Subcontractors' Health and Safety Documentation on the construction site.
 - 5.(7) Upon request, make available his health and safety record management system to an inspector, Employer, the Employer's Safety Agent or the Contractor.
 - 5.(8) Deliver the health and safety record management system to the Employer upon completion of the Works.
 - 5.(9) Ensure that a comprehensive and updated list of all his Subcontractors (including their respective subcontracting agreements) are included in the health and safety record management system.
 5. (10) Satisfy himself on the competencies and resources of the Subcontractor he intends appointing.
 6. (1) Appoint a construction supervisor.
 6. (3) Appoint assistant construction supervisors if required by an inspector.
 6. (5) Appoint individual construction supervisors for individual construction sites.
 - 6.(6) The Contractor shall after due consideration of the complexity, size and potential hazards and associated risks as well as controls towards the mitigation of risks, appoint a safety officer in writing. The contractor shall submit a detailed CV of the envisaged Safety Officer appointment for final acceptance thereof by the Employer or his Safety Agent.
 - 6.(7) Provide opportunities to the construction safety officer to provide inputs into the Health and Safety Plan.
 - 6.(8) Satisfy himself with the competencies and resources of the construction safety officer he intends appointing.
 7. (1) Perform a risk assessment prior to the commencement of any construction work.
 7. (2) On request, make available copies of the his/her risk assessment.
 7. (3) Consult with the health and safety committee on the development, monitoring and review of the risk assessment.
 7. (4) Ensure that all employees are informed, instructed and trained regarding any hazard and the related work procedures before any work commences. The contractor shall ensure that proof of such is available on site for auditing purposes.
 7. (5) Ensure that all Subcontractors are informed regarding any hazard as stipulated in the risk assessment. Further that Subcontractors conduct their own risk assessments as and when required
 7. (6) Analyse ergonomic related hazards and address the same in the risk assessment.
 7. (7) Ensure that all employees undergo health and safety induction prior to

Contractor

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Witness 2

Employer

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permitting each employee access to the Works. The Contractor shall ensure that proof of such is available on site for auditing purposes.

- 7. (8) Ensure that all visitors undergo health and safety induction and are provided with the necessary personal protective equipment. The Contractor shall ensure that proof of such is available on site for auditing purposes.
- 7. (9) Ensure that every employee is in possession and carries at all times his proof of health and safety induction training.
- 9. (1) (a) Prevent the uncontrolled collapse of any structure which may become unstable due to the carrying out of construction work.
- 9. (1) (b) Ensure that no structure is loaded in an unsafe manner.
- 9. (3) Ensure that all construction drawings are on site and available on request by an inspector, contractors, Employer, the Employer's Safety Agent or employee.

In terms of Clause 4.6 of the Contract Data, it shall be deemed that the parties to this Contract have agreed in writing in terms of Section 37(2) of the Occupational Health and Safety Act, 1993 that the Contractor accepts sole liability for due compliance with the relevant duties, obligations, prohibitions, arrangements and procedures imposed by the Occupational Health and Safety Act, 1993 and all its regulations, including the Constructions Regulations, 2003, for which he is liable as mandatory.

d) Subcontractor

To ensure compliance with the Construction Regulations, the Subcontractor shall:

- 5.(4) Demonstrate a Health and Safety Plan, based on the Employer's health and safety specification.
- 5.(4) Apply his Health and Safety Plan from the Commencement Date and until completion of the Works.
- 5.(12) Satisfy himself on the competencies and resources of any Subcontractor he intends appointing.
- 5.(14) Provide the Contractor with any information which might affect the health and safety of any person or which might justify a review of the Health and Safety Plan.

In addition to the above items, the Subcontractor shall, to ensure compliance with the Construction Regulations, comply with regulations 5.7, 6.(1), 6.(3), 6.(5), 6.(6), 6.(7), 6.(8), 7.(1), 7.(2), 7.(3), 7.(4), 7.(6), 7.(7), 7.(8), 7.(9), 9.(1)(a), 9.(1)(b) and 9.(3), summarized in Section 2.4.1(c) above.

e) Designer (Employer's Designer or Contractor's Designer)

To ensure compliance with the Construction Regulations, 2003, the Designer (as defined in the Construction Regulations, 2003) shall:

- 9.(2) Make available to the Employer all relevant information affecting the pricing of the Works.

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- 9.(b) Inform the Contractor of any hazards relating to the Works.
 - 9.2(b) Make available all information required for the safe execution of the Works.
 - 9.2(c) Ensure that information relating to geo-sciences, designs loads, and the methods and sequencing of construction processes are made available to the Contractor in a report.
 - 9.2(d) Not include dangerous procedures or hazardous materials in the structure's design which could be avoided.
 - 9.2(e) Make provision in the design of the Works for hazards likely to be encountered during its subsequent maintenance.
 - 9.(2)(f) Carry out inspections of the construction work during the construction period to ensure compliance with the designs.
 - 9.2(f) Keep records of the inspections carried out on the construction site.
 - 9.2(g) Stop any contractor from executing works not in accordance with the designs.
 - 9.2(h) Conduct a final inspection of the completed Works prior to its commissioning.
 - 9.2(h) Issue a completion certificate to the Contractor subsequent to a successful final inspection.
 - 9.(2)(i) Ensure that cognizance is taken of ergonomic design principles in order to minimize related hazards.

The Employer's Designer shall only accept responsibility to comply with the Construction Regulations, 2003 for that portion of the Permanent Works which the Employer is responsible to design in terms of the Contract.

The Contractor's Designer shall accept sole responsibility and liability to comply with the Construction Regulations, 2003 for that portion of the Permanent Works for which the Contractor is responsible to design in terms of the Contract as well as the design of the Temporary Works.

2.4.2 Secondary Parties

This section covers the duties, responsibilities and liabilities of the following secondary parties:

Construction Health and Safety Officer
Contractor's Employees Fall Protection Developer
Health and Safety Consultant
Health and Safety Representative
Risk Assessor

a) Construction Health and Safety Officer

The Construction Health and Safety Officer will act as Health and Safety advisor to the site management staff, ensuring the integrity of the Safety management System and Plan and its implementation. The Construction Health and Safety Officer can therefore never take over the line management responsibilities for safe work practices.

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The Contractor is responsible for the development of the position outcomes descriptors for the Construction Health and Safety Officer. This documentation shall be available on site for auditing purposes.

The Construction Health and Safety Officer shall if given an opportunity, provide an input into the Contractor's Health and Safety Plan.

b) Contractor's Employees

All employees will be responsible for safety on the construction site and the work place as prescribed in section 14 of the Occupational Health and Safety Act, 1993 and briefly summarized as follows:

Take reasonable care for the health and safety of himself and of other persons who may be affected by his acts,
Co-operate with his employer with regards to health and safety to ensure that his employer complies with requirements imposed on him,
Obey the health and safety rules and procedures laid down by his employer,
Report any unsafe or unhealthy situation to his employer or to the health and safety representative for his workplace,
Immediately report any incident in which he was involved which has caused an injury to himself or others, and
Assist in inquiries and incident investigations.

No employee shall intentionally or recklessly interfere with, damage or misuse anything which is in the interest of health and safety

c) Fall Protection Developer

The Fall Protection Developer will be responsible for the preparation and maintenance of a fall protection plan to be implemented by the Contractor, in such a manner to ensure compliance with regulation 8 of the Construction Regulations, 2003.

d) Health and Safety Consultant

The Health and Safety Consultant shall assist the Contractor in any health and safety matters on the Works for which he is appointed.

e) Health and Safety Representative

The Health and Safety Representative shall fulfil the duties as set out in section 18 of the Occupational Health and Safety Act, (Act 85 of 1993). A health and safety representative shall not incur any civil liability by reason of the fact only that he failed to do anything which he may do or is required to do in terms of the Act.

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f) Risk Assessor

The Risk Assessor shall facilitate the risk assessment process of the Contractor or Subcontractor. The Risk Assessor shall be responsible for the compilation and implementation of a management plan towards the continuous mitigation of identified risks to as low as is reasonable practicable.

2.4.3 Supervisors, Inspectors and Issuers

This section covers the duties, responsibilities and liabilities of the following Supervisors, Inspectors and Issuers likely to be found on the Works:

a) Batch Plant Supervisor

The Batch Plant Supervisor shall be required to ensure compliance with regulation 18 of the Construction Regulations, 2003. In addition, he shall fulfil the following duties and responsibilities:

Manage the day to day operation of a batch plant,
Be responsible for the maintenance of the batch plant,
Be able to identify developing defects and hazardous situations,
Act as the Occupational Health and Safety Representative at the batch plant, and
Take responsibility for the safety of the personnel at the batch Plant.

The Batch Plant Supervisor will have the authority to stop operation of the plant should any hazardous situation require it.

b) Construction Supervisor

The Construction Supervisor shall be responsible for supervising the construction work inclusive of the implementation and maintenance of safe work practices.

c) Construction Vehicle & Mobile Plant Inspector

The Construction Vehicle and Mobile Plant Inspector will ensure the safety of all construction vehicles and plant in such a manner to ensure compliance with regulation 21 of the Construction Regulations, 2003. The inspector will also be responsible for the regular inspection of all vehicles and plant and the recording of his findings. The Contractor shall ensure that proof of such is available on site for auditing purposes.

d) Demolition Work Supervisor

The Demolition Work Supervisor will supervise and control all demolition work on the

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Works in such a matter to ensure compliance with regulation 12 of the Construction Regulations, 2003. The supervisor will be responsible for all administration related to the demolition works. The Contractor shall ensure that proof of such is available on site for auditing purposes.

e) Electrical Temporary Installation Inspector

The Electrical Temporary Installation Inspector will control all temporary electrical installations on the Works to ensure compliance with regulation 22 of the Construction Regulations, 2003, the Electrical Installations Regulations, 1992 and SANS 0142. The Contractor shall ensure that proof of such is available on site for auditing purposes.

f) Excavation Work Supervisor

The Excavation Work Supervisor will supervise all excavation work on the Works in such a matter to ensure compliance with regulation 11 of the Construction Regulations, 2003 and shall in particular ensure that every excavation is inspected:

On a daily basis before each shift,
After every blasting operation,
After an unexpected fall of ground,
After substantial damage to supports, and
After rains.

The Contractor shall ensure that proof of such is available on site for auditing purposes.

g) Explosive Power Tools Issuer

The Explosives Power Tools issuer will control the issuing and collection of explosive tools, cartridges and nails or studs to ensure compliance with regulation 19 of the Construction Regulations, 2003. The Contractor shall ensure that proof of such is available on site for auditing purposes.

h) Fire Extinguisher Inspector

The Fire Extinguisher Inspector will be responsible for the operation and inspection of all firefighting equipment on the Works to ensure compliance with regulation 27 of the Construction Regulations, 2003. The Contractor shall ensure that proof of such is available on site for auditing purposes.

i) Formwork and Support Work Supervisor

The Formwork and Support Work Supervisor will supervise all formwork and support work operations and will see to it that formwork and support work erectors, operators and inspectors are competent to carry out their work Works to ensure compliance with

Contractor

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regulation 10 of the Construction Regulations, 2003. The Contractor shall ensure that proof of such is available on site for auditing purposes.

j) Ladder Inspector

The Ladder Inspector will be responsible for the regular inspection and recording of his/her findings of all ladders on the Works and to ensure compliance with regulation 13 of the General Safety Regulations. The Contractor shall ensure that proof of such is available on site for auditing purposes.

k) Material Hoist Inspector

The Material Hoist Inspector will be responsible for the daily inspection of material hoists or similar machinery and to ensure Works to ensure compliance with regulation 17 of the Construction Regulations, 2003. The inspector must have experience pertaining to the erection and maintenance of all hoists on the Works. The inspector must be able to determine the serviceability of the entire material hoist including guides, ropes and their connections, drums, sheaves or pulleys and all safety devices. The Contractor shall ensure that proof of such is available on site for auditing purposes.

l) Scaffolding Supervisor

The Scaffold Supervisor will be required to supervise all scaffolding work operations carried out on the Works and to ensure compliance with regulation 14 of the Construction Regulations, 2003 as well as ensure compliance with applicable SABS 085 specifications. The Contractor shall ensure that proof of such is available on site for auditing purposes.

m) Stacking Supervisor

The Stacking Supervisor shall supervise the stacking and storage of all articles on site and shall be responsible to ensure compliance with regulation 26 of the Construction Regulations, 2003.

n) Suspended Platform Supervisor

The Suspended Platform Supervisor will supervise all suspended platform work operations carried out on the Works and to ensure compliance with regulation 15 of the Construction Regulations, 2003. The supervisor will also see to it that all suspended platform erectors, operators and inspectors are competent to carry out their work. The Contractor shall ensure that proof of such is available on site for auditing purposes.

Contractor

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Employer

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It will be expected from the Contractor to include in his safety plan method statements on how to accomplish the requirements relating to the Construction Regulations, 2003 and related incorporated standards and regulations.

Contractors should describe how their safety management systems will work and what control procedures they plan on using to ensure safety on the construction site

The following generic aspects should be covered in their safety plan

- What administrative procedures the Contractor envisages to use in the implementation and maintenance of the safety plan with reference to the construction site
- How continuous assessment of the safety plan will be assessed and implemented with respect to construction site
- What control systems the Contractor envisages to implement on site to support his safety program
- How the Contractor will ensure that he adheres to the construction regulations in respect of competent persons for appointments
- What external resources the Contractor envisages on using to ensure successful implementation and sustainability of the safety plan
- What training to employees the Contractor envisages and how he would go about to execute it
- The Contractor should indicate which competent persons he plans on employing

During the tendering phase it will be expected from the tenderer to briefly explain how the abovementioned will be accomplished.

Once a successful tenderer has been appointed, the Contractor shall supply a detailed Health and Safety Plan for review by the Employer, prior to site mobilization, to ensure compliance with the Construction Regulations, 2003. Mobilization shall be dependent upon the acceptance of the Contractor's Health and Safety Management Plan by the Employer. The Contractor's Health and Safety Plan should include, but not be limited to, those sections indicated in Section 3.2 of this specification.

The Contractor's Health and Safety Plan prepared in accordance with this specification shall consist of at least the following sections and sub-sections:

1. Aim and Scope of Plan,
2. Risk Assessment,
 - a. Alternative Forms of Risk Assessment,
 - b. Methodology of Risk Assessment,
 - c. Elements of Risk Assessment,

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- i. Scope of assessment,
 - ii. Risks Identified,
 - iii. Risk Analysis,
 - iv. Risk Evaluation,
 - v. Risk Treatment,
 - vi. Monitoring and reviewing,
 3. Resources,
 - a. Health and Safety Staffing Organogram,
 - b. Supervisors, Inspectors and Issuers,
 - c. Employees,
 - d. Subcontractors inclusive of their scope of work and their core resources,
 - e. Training,
 - f. Plant,
 - g. Vehicles,
 - h. Equipment
 4. Materials,
 - a. Temporary Materials
 - b. Permanent Materials
 5. Categories of Work
 6. Implementation of Health and Safety Plan,
 - a. Administrative systems,
 - b. Training,
 - c. Reporting,
 - d. Monitoring,
 - e. Inspections,
 7. Auditing,
 - a. Internal audits,
 - b. Follow-up audits,
 8. Financial Aspects,
 9. Emergency procedures and response

This section of the specification provides guidelines for the Contractor in preparation of risk assessments in order to ensure compliance with Regulation 7 of the Construction Regulations, 2003. This section highlights the principles related to the preparation of suitable and sufficient risk assessments. Contractor Staff intending to prepare risk assessments should be trained and suitably experienced in the application envisaged.

A suitable and sufficient risk assessment is an assessment which:

Accounts for risks that are likely to arise during the construction of the Works,
Enables the development and implementation of systems to manage the risks,

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Remains valid for a reasonable period of time,
Provides a basis for training of employees, and
Improves working procedures and introduce long term controls.

The requirements of the Construction Regulations will not be satisfied by a single risk assessment exercise that holds good for all time. The risk assessment process on the Works is an ongoing process.

The objectives of risk assessments are to:

Identify the risks that are mostly in need of reduction,
Identify the various options for achieving such reduction,
Identify the risks that require careful ongoing management, and
Identify the nature of the required ongoing attention.

In order to ensure compliance with the Construction Regulations, the Contractor will be required to carry out the following three forms of risk assessment:

4.2.1 Baseline or datum risk assessments

The Contractor will be required carry out a risk assessment before the commencement of construction activities on the Works. This “baseline” or “datum” risk assessment will form part of the Contractor’s Health and Safety Plan. The risks and hazards to which persons, plant, vehicles and facilities may be exposed during the construction of the Works should be identified and evaluated. Measures to reduce or control these risks or hazards should be defined during this assessment. The effectiveness of the measures defined and the baseline risk assessment prepared shall be monitored and reviewed from time to time to ensure that it remains relevant and accurate.

4.2.2 Issue based risk assessments

The Contractor will be required to carry out separate risk assessments during construction of the Works when methods and procedures are varied, for example when:

Designs are amended,
New machines are introduced,
Plant is periodically cleaned and maintained,
Plant is started-up or shut-down,
Systems of work change or operations alter,
Incidents or near-misses occur, or
Technological developments invalidate prior risk assessments.

4.2.3 Continuous risk assessments

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The Occupational Health and Safety Act specifically requires that employers shall provide and maintain working environments that are safe and without risk to health. The general awareness of hazards needs to be raised as work ethic to maintain a safe and risk free environment on an ongoing basis. This is achieved by continuous risk assessments, the most important form of risk assessment that takes place as an integral part of day-to-day management. Examples of continuous risk assessments include:

- Regular audits,
- Maintaining general hazard awareness,
- Pre-work risk assessment

The Contractor shall in the preparation of his risk assessments, follow the following general principles:

- Employ a team of suitably qualified individuals with appropriately varied and relevant experience in risk assessment,
- The appointed risk assessor shall lead the risk assessment,
- Provide the team with background data, scope of work, potential hazards and underlying causes, and
- Where necessary employ experts for complex risk assessments and aspects of risk assessments that require experiential judgment,
- Institute an ongoing system of identifying aspects of the work that require risk assessment, and
- Conduct risk assessments in workshops of the team or by individual members of the team under guidance of the leader as appropriate to the situation.

4.4.1 General

The process of carrying out a risk assessment consists of a number of well-defined steps. These steps improve decision-making by providing a greater understanding of the risks and their impacts. The main steps or elements of the risk assessment process are as follows:

- 1) Consider scope and nature of risks involved, determine purpose and physical and legal bounds of assessment and define risk evaluating criteria,
- 2) Systematically identify risks,
- 3) Analyze risks with regard to causes, likelihood of occurrence and possible consequences against the background of existing controls and its effectiveness,
- 4) Evaluate risks in terms of pre-established criteria to determine need and priority for attention,
- 5) Treat risks through a process of risk elimination, substitution, controlling risk at source,

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

risk mitigation such as training and as far as risk remains, provide personal protective equipment (PPE),

- 6) Monitor and review progress and performance in terms of management system, and
- 7) Communicate and consult.

The following sections 4.4.2 to 4.4.7 deal with items (2) to (7) above.

These items form the continuing process of the risk assessment as indicated in Figure 1, below.

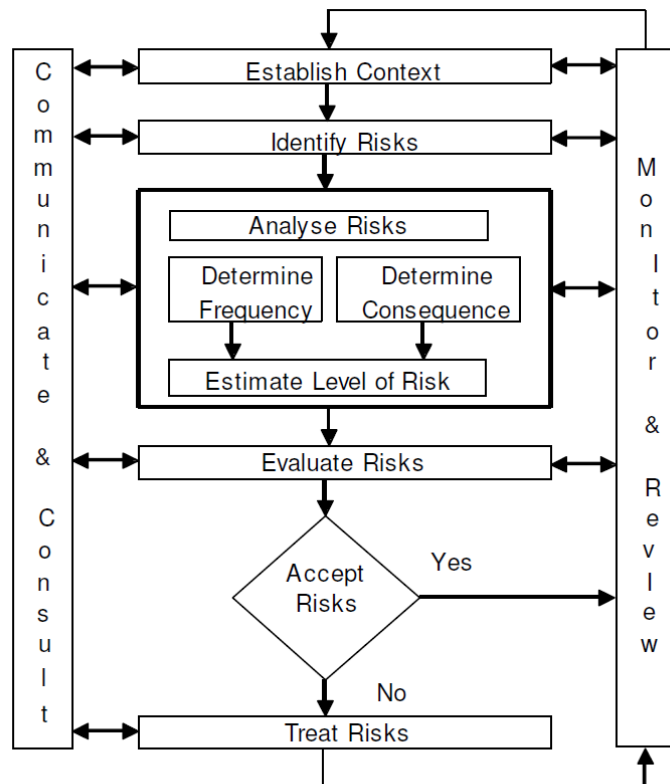


Figure 1: Risk Management Process

The Contractor shall ensure that the risk assessment compiled as part of his Health and Safety Plan contains at least these items.

4.4.2 Risk Identification

The Contractor should regard this step of the risk assessment as the most important. Subsequent analysis and evaluation of risks and the development of risk control measures are wasted if the risks or hazards on the Works are not carefully identified.

The Contractor should bear the following principles in mind when identifying the risks:

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

- i) Systematically address all risks or hazards on the Works,
- ii) Review all aspects of the work, but consider only those that have a potential to cause harm,
- iii) Rank the risks identified in order of importance and then use appropriately advanced techniques to deal with major risks,
- iv) Deal mainly with major risks and don't obscure these with unimportant information, especially minor risks,
- v) Address what actually happens in the workplace during the work activity
- vi) Consider all persons that may be affected,
- vii) Highlight those groups and individuals who may particularly be at risk, and
- viii) Review the adequacy and effectiveness of existing safety controls and measures

4.4.3 Risk Analysis

In this step, the Contractor will be required to analyze the risks identified by determining each risks frequency and magnitude or severity of the consequence of the risk or hazard.

The frequency of occurrence of a hazard may be expressed as the number of times that it may occur in a year, decade, lifetime, century, or longer period, according to comparative human experience. The magnitude of the likely consequence of a hazard may be expressed in terms of the degree of incapacitation, number of people or costs involved. The frequency of occurrence of a hazard and the magnitude of its consequence may be compounded as the risk that it poses as shown in the "risk matrix" in Figure 2 below.

| Frequency of Occurrence of Hazard | Severity of Consequences of Potential Hazard | | | | | |
|---|--|---------------|------------|-------------------------|------------|---------------|
| | 1 Medically treatable | 1 Compensable | 10 Com | 1 Permanently disabling | 1 Fatality | 10 Fatalities |
| Frequent; 1 or more occurrences per year | Medium | High | Very high | Severe | Severe | Severe |
| Several times during a career; 0.1 occurrences | Medium-low | Medium | High | Very high | Severe | Severe |
| Unlikely, but possible during a career; 0.01 occurrences per year | Low | Medium-low | Medium | High | Very high | Severe |
| Very unlikely during a career; 0.001 occurrences per year | Low | Low | Medium-low | Medium | High | Very high |
| Barely credible; 0.0001 occurrences | Low | Low | Low | Medium-low | Medium | High |

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

The columns in the table represent the likely consequence of the hazard and the rows, the frequency of occurrence. The scales for both quantities represent consistent progressions, albe they qualitative. The risks evidently range from low to severe. Note that diagonals in the matrix represent the risks of the identified hazards, taking the effectiveness of controls into consideration.

The table represents a typical risk matrix that need not necessarily be adopted by the Contractor. The Contractor may use an alternative risk matrix provided that it is approved as part of his Health and Safety Plan.

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

4.4.4 Risk Evaluation

In this step the Contractor will be required to compare the assessed risk with similar risks previously experienced for the purpose of deciding how to treat the risk. A useful systematic approach for this purpose is as follows:

If the assessed risk exceeds similar risks that have occurred in the past and that are considered to be unacceptable, the assessed risk would require treatment depending upon its magnitude as discussed in Section 4.4.5, or

If the assessed risk exceeds similar historical risks that are acceptable, treatment of the assessed risk will depend on the extent by which it exceeds the historical risks, or

If the assessed risk is less than historical risks that are unacceptable, treatment of the assessed risk will depend on the extent by which it is less than the historical risks, or

If the assessed risk is less than historical risks that are acceptable, the assessed risk would also be acceptable and would not require any treatment.

4.4.5 Risk Treatment

In this step, the Contractor will select and implement appropriate measures for dealing with risk. Typically measures comprise the following:

Elimination by changing designs, procedures, management methods, etc, applicable to high frequency–high consequence risks, or

Reduction by changing designs, procedures, management methods, etc, applicable to high frequency–high consequence risks, or

Minimization by changing designs, procedures, management methods, etc, applicable to high frequency–low consequence risks, or

Transfer or share whole or part of the risk to another party by insurance, contractual arrangements or organizational structures, applicable to low frequency–high consequence risks, or

Control to ensure that risks do not increase, applicable to low frequency–high consequence risks, or

Retention together with provision of monitoring and personal protective equipment, applicable to low frequency–low consequence residual risks after reduction, or

Acceptance without particular action other than provision of personal protective equipment, applicable to low frequency–low consequence risks.

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

The following principles enable the optimum treatment to be determined:

Avoid risks altogether if possible by using different approaches, substances or methods of work,
Combat risks at source rather than by adopting secondary measures,
Adapt work to the individual rather than the individual to the work, that is, in the design consider the people and their attributes that will operate the system
Take advantage of technological and technical progress,
Risk prevention measures must be part of a coherent policy and approach to safety management that involves performance measurement, goal setting, feedback and analysis, Give preference to measures that protect the whole work force,
Ensure that those for whom protection is provided understand what they need to do to make sure that the protection works, and
Ensure that measures to control risks are an accepted part of an active health and safety culture supported by all levels of the organization; single risk reduction initiatives invariably fail.

4.4.6 *Reporting and Recording*

The Contractor shall ensure that the risk assessment process is recorded in the form of a report and included in his Health and Safety Plan. The report should be easily accessible to the Contractor's employees, their representatives, to inspectors, the Employer or his Safety Agent and the Engineer. The essential contents of the report should be as follows:

Objectives and expected outcomes, Description of the Works under assessment, Summary of context of study, Composition of risk assessment team, (including qualifications and relevant experience), Approach used to systematically identify risks, Identified risks (ranked in order of priority), Method adopted for assessing frequencies and consequences of risks, Consequences (ranked in order of magnitude), Identification of individuals and groups who may be affected by major hazards and risk and who may especially be at risk, Basis for defining safety standards to be achieved, Contractor's resources devoted to risk assessment, Actions proposed to reduce unacceptably high risks, Review effectiveness of existing safety measures to control risks, and Implementation programme of selected treatments (including controls to manage unacceptably high risks).

4.4.7 *Monitoring and Review*

It is necessary to monitor risks, the effectiveness of the risk treatment plan and the strategies and management system set up to control implementation. Control of the risk management program entails the setting of standards, monitoring actual performance, comparing the performance with the standards and correcting any

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

deviations from the standard. Risks and the effectiveness of the control measures need to be monitored to ensure changing circumstances do not alter risk priorities. Few risks remain static.

Ongoing review is essential to ensure that the management plan remains relevant. Factors that affect the likelihood and consequences of an outcome may change, as may factors that affect the suitability or cost of the various treatment options. If an accident occurs, or if more is learnt about the hazards in the workplace, the risk assessment may need to be reviewed or modified. Hazards may be observed that have not been anticipated or previously identified and which may require appropriate measures to be taken. After an accident has occurred, it is important to determine whether it was predicted, whether preventive measures were identified, and if so, why they did not work, whether the risk assessment is still suitable and sufficient if it failed to predict the accident, whether the decision to accept a predicted risk as tolerable is still valid, why the accident occurred and what should be done to prevent similar accidents occurring again. It is therefore necessary to regularly repeat the risk management cycle, the time between reviews being dependent on the nature of the risks and the degree of change likely to take place in the work activity. Review is an integral part of the risk management treatment plan.

4.4.8 Communication and Consultation

The Contractor will be required to communicate and consult with internal and external stakeholders during each step of the risk assessment process. Stakeholders will include the Employer and his Safety Agent, the Engineer and the Contractor's employees and consultants.

Effective communication will ensure that those responsible for implementing the risk management process and those with a vested interest, understand the basis on which decisions are made and why particular actions are taken. It will also ensure that the perceptions of all those involved are noted and accommodated during the process.

In this section of his Health and Safety Plan, the Contractor will be required to state how he intends to comply with the requirements of the Occupational Health And Safety Act, 1993 and all its Regulations and related incorporated standards with regards to the resources and facilities intended for use on the temporary and permanent Works.

5.2.1 Inspectors, supervisors and Issuers

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

The Contractor shall provide in his Health and Safety Plan his intended Staffing Organogram for the Works. The organogram should include those inspectors, supervisors and issuers as envisaged in the Construction Regulations, 2003 required for the Works and any additional supervisory staff members as the Contractor (having taken the scope of the Works into account) considers necessary.

Copies of the supervisory staffs' curriculum vitae or portfolio of evidence and their appointment letters should be appended to the Contractor's Health and Safety Plan.

The Contractor's Health and Safety Plan should in addition cover at least the following aspects:

- The number of unskilled, semi-skilled and skilled (including Foreman, Charge hands, Artisans, Operators, Drivers, Clerks, Storeman and Team Leaders) employees he intends employing on the Works,
- The health and safety training to be provided to the Contractor's employees, The programme of the health and safety training,
- Systems for the review of the effectiveness of the training provided, and
- Systems to determine further training requirements throughout the construction period.

In preparing his Health and Safety Plan, the Contractor shall ensure compliance with Clause PS 22 in Section 4.2 of the Project Specifications.

Pro-forma letters of appointment for the various inspectors, supervisors and issuers as contemplated in the Construction Regulations, 2003 are included in Annexure 1 to this specification for use by the Contractor. The Contractor shall ensure that he includes in his Health and Safety Plan the appointment letters for all his inspectors, supervisors and issuers appointed for the Works.

5.2.2 Subcontractors

The Contractor shall with reference to the use of subcontractors on the Works and without limiting his obligations, cover at least the following matters in his Health and Safety Plan:

- The steps intended to ensure that his Subcontractors prepare, implement and maintain Health and Safety Plans,
- How health and safety information will be made available to his Subcontractors when changes are brought about to the design,
- How he intends determining that his Subcontractors are registered and in good standing with the compensation fund or with a licensed compensation insurer prior to the commencement of the Works,

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|---|--|--|---|--|--|

How he intends determining if his Subcontractors have made provision in their tenders for the cost of health and safety measures during the construction of the Works,
How he intends satisfying himself on the competencies and resources of Subcontractors he intends appointing, and
How he intends ensuring that his Subcontractors perform risk assessments prior to commencing their respective portions of the Works.

5.2.3 Competencies

The Contractor shall establish if a person is competent to perform a certain duty or be appointed in a certain capacity by requesting all candidates to supply the required certificates of competency. Where certificates of competencies cannot be delivered, the Contractor shall request a portfolio of evidence from the respective candidates.

Contractors should do enquiries at the South African Qualifications Authority (SAQUA) relating to the qualifications required for appointment of competent persons.

5.2.4 Physical and Psychological Fitness

Were required by the Occupational Health & Safety Act and its regulations the contractor shall ensure that his employees are in possession of a valid medical certificate of fitness to work in such an environment.

In terms of the Construction Regulations 2003 medical certificates of fitness are required for persons working at elevated positions (Regulation 8(2)(b)), persons working on suspended platforms (Regulation 15(12)a) tower crane operators (Regulation 20 (g)) and construction vehicle and mobile plant operators (Regulation 21 (1)(d)(ii)).

5.3.1 Suspended platform

The Contractor shall with reference to Regulation 15: Suspended platforms of the Construction Regulations, 2003, and without limiting his obligations, cover at least the following matters in his Health and Safety Plan:

How he intends complying with SABS 1808 and SABS 1903,
What systems he intends using to ensure the safety of all suspended platforms,
What tests will be performed to establish the safety of suspended platforms,
How he intends maintaining suspended platforms being used, and
How he will document the design, testing, maintenance and inspections of the suspended platforms.

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

5.3.2 *Boatswains chairs*

The Contractor shall with reference to Regulation 16: Boatswains chairs of the Construction Regulations, 2003, and without limiting his obligations, cover at least the following matters in his Health and Safety Plan:

Explain what systems he intends using to ensure the safety of all boatswains chairs, Explain how he intends maintaining boatswains chairs in use, What tests will be performed to establish the safety of boatswains chairs, and How he will document the design, testing, maintenance and inspections of the boatswains chairs.

5.3.3 *Material hoists*

The Contractor shall with reference to Regulation 17: Materials Hoist, of the Construction Regulations, 2003, and without limiting his obligations, cover at least the following matters in his Health and Safety Plan:

How he intends confirming the construction stability of the material hoists, What systems he intends using to ensure the safety of all material hoists, What tests will be performed to establish the safety of all material hoists, How he intends maintaining the material hoists being used, and How he will document the design, testing, maintenance and inspections of all material hoists, and What safety procedures and precautions are envisaged to ensure safe operation of the materials hoists.

5.3.4 *Batch Plants*

The Contractor shall with reference to Regulation 18: Batch plants of the Construction Regulations, 2003, and without limiting his obligations, cover at least the following matters in his Health and Safety Plan:

What systems he intends using to ensure the safety of all batch plants, How he intends maintaining the batch plants in use, and How he will document the design, testing, maintenance and inspections of batch plants in use.

5.3.5 *Explosive powered tools*

The Contractor shall with reference to Regulation 19: Explosive powered tools, of the Construction Regulations, 2003, and without limiting his obligations, cover at least the following matters in his Health and Safety Plan:

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

How he intends controlling the issuing of explosive powered tools,
How he intends implementing safety procedures prior to use of explosive powered tools, and
What safety measures will be required during the use of explosive powered tools.

5.3.6 *Cranes*

This section of the specification shall be read in conjunction with the provisions of the Driven Machinery Regulations, 1988.

The Contractor shall with reference to Regulation 20: Cranes, of the Construction Regulations, 2003 and without limiting his obligations, cover at least the following matters in his Health and Safety Plan:

How will environmental factors be taken into account in respect to the use of cranes,
What systems he intends using to ensure the safety of all cranes in use,
How he intends maintaining cranes in use,
What tests will be performed to establish the safety of all cranes in use,
What safety procedures and precautions are envisaged to ensure the safe operation of all cranes in use,
How he will document the design, testing, maintenance and inspections of all cranes in use, and
The contractor shall proof compliance of the Driven Machinery Regulation, 1988, with reference to the lifting machinery and tackle being used.

5.3.7 *Construction vehicles and mobile plant*

The Contractor shall with reference to Regulation 21: Construction vehicles and mobile plant of the Construction Regulations, 2003, and without limiting his obligations, cover at least the following matters in his Health and Safety Plan:

How he intends ensuring that construction vehicles and mobile plant are:

- o Of acceptable design and construction,
- o Maintained and in good working order,
- o Used according to design specifications, and
- o Are protected from falling into excavations, water or areas lower than the working surfaces,

How he intends ensuring that workers are trained, authorised and physically fit to operate construction vehicles and mobile plant,
What traffic arrangements and safety precautions will be implemented to ensure safe operation of construction vehicles and mobile plant on the Works, and
How he intends safeguarding employees against construction vehicles and

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

mobile plant moving on the construction site.

5.3.8 Electrical Installation and Machinery on construction sites

This section of the specification shall be read in conjunction with the provisions contained in the Electrical Installation Regulations, 1992.

The Contractor shall with reference to Regulation 22: Electrical Installation and machinery on construction sites of the Construction Regulations, 2003, and without limiting his obligations, cover at least the following matters in his Health and Safety Plan:

How he intends safeguarding employees against electrical cables or apparatus under, over or on site, and

How he will ensure that electrical installations are of adequate strength to withstand working conditions on a construction site.

5.3.9 Ladders

The Contractor shall with reference to Regulation 13A of the General Safety Regulations and without limiting his obligations, cover at least the following matters in his Health and Safety Plan:

How he intends ensuring that ladders used are safe and constructed of materials approved for its intended use, and

What precaution will be made to ensure the stability of ladders in use.

In this section of his Health and Safety Plan, the Contractor will be required to state how he intends to comply with the requirements of the Occupational Health and Safety Act, 1993 and all its regulations and related incorporated standards with regards to the design, supply, storage and erection of materials used for the temporary and permanent Works.

The Contractor shall with reference to Regulation 8: Fall Protection Equipment of the Construction Regulations, 2003, and without limiting his obligations, cover at least the following matters in his Health and Safety Plan:

Compilation of a fall protection plan,

How the fall protection plan will be implemented and maintained,

How employees will be screened and declared medically fit to work in areas

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

where fall protection equipment is needed,
How the safeguarding of persons, plant, vehicles, equipment and facilities on the construction site is contemplated,
Training of staff working at heights and in the use of fall protection equipment, How a continuous assessment of the situation will be executed,
How fall protection equipment will be inspected for safety, and
How corrective actions will be implemented
Emergency plans and procedures for treatment of incidents relating to falls from height.

The Contractor shall with reference to Regulation 14: Scaffolding of the Construction Regulations, 2003, and without limiting his obligations, cover at least the following matters in his Health and

Safety Plan:

How compliance with SABS 085 will be ensured,
How scaffolding in use will be maintained,
What systems are intended to ensure the safety of scaffolding used, and
What tests will be performed to establish the safety of scaffolding used Training plan for scaffold erectors and inspectors.

This section of the specification shall be read in conjunction with the provisions for the use and storage of flammable goods as determined in the General Safety Regulations.

The Contractor shall with reference to Regulation 23: Use and temporary storage of flammable liquids on construction sites of the Construction Regulations, 2003, and without limiting his obligations, cover at least the following matters in his Health and Safety Plan:

How flammable liquids will be stored to minimize the risk of fire or explosions,
How the contractor will identify a flammable store
What safety precautions will be employed if ventilation of the flammable store is not possible.
How access to flammable stores will be controlled,
How empty vessels used for the storage of flammable liquids will be disposed of,
What quantity of flammable liquids will be stored on the construction site,
What systems are intended to ensure the safe storage of flammable liquids, and
What retaining methods will be used to prevent the spreading of any spillage.

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

This section of the specification shall be read in conjunction with the provisions for the stacking of articles contained in the General Safety Regulations.

The Contractor shall with reference to Regulation 26: Stacking and storage on construction sites of the Construction Regulations, 2003, and without limiting his obligations, cover at least the following matters in his Health and Safety Plan:

Who will supervise the stacking and storage of materials on site, and
What systems are intended to ensure the safe stacking and storage of materials on the site

The Contractor shall comply with Section 2 of the General Safety Regulations, and shall in particular provide all necessary personnel protective equipment for his personnel for the duration of the construction period. To this end the Contractor shall without limiting his obligations indicate in his Health and Safety Plan:

Identify training requirements in the Contractors Training plan in the use and maintenance of personal protective equipment,
The type of personnel safety equipment he will provide, How he intends issuing it to his employees, and
How he will maintain the personnel safety equipment issued.

The Contractor shall comply with Section 3 of the General Safety Regulations regarding first aid, emergency equipment and procedures.

In this section of his Health and Safety Plan, the Contractor will be required to state how he intends to comply with the requirements of the Occupational Health and Safety Act, 1993 and all its regulations and related incorporated standards with regards to the execution of the following categories of work.

The Contractor shall, without limiting his obligations, cover at least the following matters in his Health and Safety Plan under this category of work:

7.1.1 Construction welfare facilities

Contractors will be required to adhere to Regulation 28: Construction welfare

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facilities of the Construction Regulations, 2003.

This regulation must be read in conjunction with the provisions of the Facilities Regulations, 1990 (as amended) and SANS 0400.

The Contractor must discuss the following in detail in his safety plan:

How will the Contractor establish the amount of facilities required for employees to shower, change, eat and attend to sanitary needs

What measures will the employer take to house employees on site who lives far from their residences or for the provision of transport

7.1.2 Environmental regulations for workplaces

The Contractor shall comply with the Environmental Regulations for Workplaces, 1987, and shall address the following aspects as described in the regulations in his Health and Safety plan:

Thermal requirements, Lighting, Windows, Ventilation, Housekeeping, Noise and hearing conservation, Precautions against flooding, and Fire precautions and means of egress.

7.1.3 Housekeeping on construction sites

Contractors will be required to adhere to Construction Regulation 25: Housekeeping on construction sites, of the Construction Regulations, 2003.

This regulation must be read in conjunction with the provisions of the Environmental Regulations for Workplaces, 1987 (as amended).

The Contractor must discuss the following in detail in his safety plan:

How will contractors ensure the neatness of construction sites

What measures does the Contractor envisage to

- o Store and/or stack materials,
- o Remove debris from site,
- o Prevent unauthorized entrance to the site
- o Protect employees or passers-by from falling objects

7.1.4 Fire precaution on construction sites

Contractors will be required to adhere to Construction Regulation 27: Fire precautions on construction sites, of the Construction Regulations, 2003.

This regulation must be read in conjunction with the provisions of the Environmental Regulations for Workplaces, 1987 (as amended).

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

The Contractor must discuss the following in detail in his safety plan:

- How the Contractor will minimize the risk of fire on the site
- How the Contractor will identify potential fire hazards
- What prohibitions the Contractor will implement to manage risk areas
- How many employees the Contractor will train in fire fighting
- What organization the Contractor envisage to combat fires on sites
- What precautions and procedures will be followed to evacuate employees in the case of a fire

7.1.5 *Water Environments*

The Contractor will be required to adhere to Construction Regulation 24: Water Environments, of the Construction Regulations, 2003.

The Contractor must discuss the following in detail in his safety plan:

- What precautions will the Contractor take to identify dangers where employees may fall into water,
- What safety procedures and equipment will the Contractor implement to safeguard employees working at water environments.

7.1.6 *Structures*

The Contractor will be required to adhere to Construction Regulation 9: Structures, of the Construction Regulations, 2003.

The Contractor must discuss the following in detail in his safety plan:

- Explain what controls, test or precautions will be made to prevent structures from collapsing during construction,
- The Contractor shall indicate what steps will be taken and implemented to ensure that structures or parts thereof will not be loaded in such a manner that it may collapse, and
- What procedures does the Contractor envisage to implement in order to obtain all relevant data on structures before commencement of construction work.

7.1.7 *Watching, barricading and lighting*

The Contractor will be required to adhere to regulations 11.3.(i) and 11.3.(l) of the Construction Regulations, 2003.

The Contractor must discuss the following in detail in his safety plan in respect of any excavation or other dangerous activity adjacent to public roads and thoroughfares:

Type of barrier or fencing to be used,

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

Type and spacing of warning lights and warning signs, and
Control systems and personnel he intends employing to ensure that the
above items are maintained.

7.1.8 Hazardous Chemical Substances

The Contractor will be required to adhere to the Regulations for Hazardous Chemical Substances 1995 as amended in the handling and storage cement of and other hazardous chemical substances.

The Contractor must discuss the following in detail in his safety plan in respect of each hazardous chemical substance that will be used in the works:

- Storage of substance
- Handling of substance
- Protective clothing and other devices to be used while handling the substance
- Medical surveillance.

The Contractor shall, without limiting his obligations, cover at least the following matters in his Health and Safety Plan under this category of work:

7.2.1 Demolition work

Contractors will be required to adhere to Construction Regulation 12: Demolition work, of the Construction Regulations, 2003.

The Contractor shall discuss the following in detail in his safety plan:

- Briefly explain how he will safeguard people and property during and after demolition works
- Briefly explain how he will protect staff from dangerous situations
- Discuss the methods proposed to safeguard the public and property against harm during demolition works
- Discuss what type of equipment he envisage to use during demolition work
- How will the Contractor ensure the safety of equipment used during demolition work
- What steps will the Contractor deem necessary to take where hazardous materials is encountered
- Dust control measures
- Noise control measures

The Contractor shall, without limiting his obligations, cover at least the following matters

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

in his Health and Safety Plan under this category of work:

7.3.1 *Excavation work*

Contractors will be required to adhere to Construction Regulation 11: Excavation work, of the Construction Regulations, 2003.

The Contractor must discuss the following in detail in his safety plan:

How will the Contractor establish the stability of ground prior to excavations,
What steps will the Contractor follow to ensure that bolstering, shoring and bracing is sufficient to ensure the safety of the excavation, and
What steps will the Contractor follow to ensure the equipment used to safeguard an excavation is sufficient and safe.

The Contractor shall, without limiting his obligations, cover at least the following matters in his Health and Safety Plan under this category of work:

7.4.1 *Formwork and support work*

The Contractor shall with reference to Regulation 10: Formwork and support work, of the Construction Regulations, 2003, and without limiting his obligations, cover at least the following matters in his Health and Safety Plan:

How the design of formwork and support work will be carried out,
How the erection of formwork and support work will be managed,
How the continuous assessment of the safety of formwork will be done,
How the loading of formwork and support work will be managed or limited,
and
How he intends keeping records of the above.

The Contractor shall comply with Section 9 of the General Safety Regulations, with regards to the welding, flame cutting, grinding, soldering or similar operations associated with pipework.

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The Contractor shall describe in his Health and Safety Plan how he intends implementing his plan. The Contractor shall indicate the methods he intends using to ensure accurate record keeping of all critical elements identified in his risk assessment and covered in

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

his Health and Safety Plan.

The Contractor shall indicate how internal audits will be carried out, how shortcomings will be addressed, how he intends to review the safety plans, how he would train staff and how he would implement the findings and recommendations of internal audits or inputs of employees.

The Contractor shall comply with Section 9 of the General Administrative Regulations, 1996. The Contractor's administrative system shall without limiting his obligations, cover the following:

- Up keep of a safety file on site,
- Maintenance of his Health and Safety plan,
- Procedures to follow for the appointment of competent persons,
- Application for permits,
- Procedures to follow for notifications, Injury on duty [IOD] administration,
- Recording of minutes of safety meetings, Recording of checklists,
- Safe keeping of checklists, and
- Internal audits.

The Contractor shall in particular ensure that at least one copy of the Occupational Health and Safety Act, 1993 and its Regulations is available on the for every 20 employees employed.

The Contractor shall comply with Section 9 of the General Administrative Regulations, 1996 and shall in particular (in accordance with section 12) furnish an inspector with information relating to health and safety on the construction site, when requested to do so.

The Contractor shall notify the Employer of any investigations, complaint or criminal charge which may arise as a consequence of the provision of the Occupational Health and Safety Act, 1993 and its Regulations, pursuant to work performed in terms of this Contract.

The Contractor shall train all his employees in accordance with the requirements of section 13 of the Occupational Health and Safety Act, 1993. The Contractor shall ensure that every employee is informed of the following:

The hazards of any work he has to perform or plant machinery or equipment he is

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

permitted to use, and

The precautionary measures which should be taken regarding the above.

The Contractor shall, without limiting his obligations, indicate in his Health and Safety Plan how he intends:

Identifying the training needs of the personnel he intends employing, and

Implementing the training identified

What proof of induction training will be carried by his employees (e.g. laminated type identification card).

The Contractor shall conduct at least one formal safety meeting per month with his employees to ensure safety awareness and shall maintain appropriate records of attendance and meeting content. Such records shall be made available to the Employers Safety Agent. Such meetings shall address at least the following:

Accident / safety incidents

Hazardous conditions

Hazardous materials / substances

Job or work projections

Work procedures

Protective clothing / equipment

Housekeeping

General safety topics

The Contractor shall be required to inspect each workplace prior to works commencing to ensure that all protective equipment is in place and that by entering the workplace no person will be exposed to any hazard which could affect his health or safety. The Contractor shall without limiting his obligations, indicate the following in his Health and Safety Plan:

The inspection and monitoring procedures he intends employing to determine the safety of workplaces, and

Who will be responsible for the checking of each workplace at the commencement of each shift.

The Contractor shall include in his Health and safety Plan all the checklists he intends using during the inspection and monitoring of the implementation of his Health and Safety Plan.

The Contractor can expect inspections of the works by any of the following parties:

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

The Employer or his Safety Agent,
The Employer's Occupational Safety Officer, or
The designated officer serving in the Department of Manpower and appointed by
the Minister as Chief Inspector or his representative.

In addition to site inspections performed by the Employer or his safety agent they shall also do audits and assess the safety situation at the works and investigate incidents. Follow-up inspections will be performed to ensure compliance to recommendations done.

The Employer, his Safety Agent or his Occupational Safety Officer may stop the work at any time under the following conditions:

If the Contractor is not compliant with his Health and Safety Plan Imminent threat to the health and safety of any person on site Continuous non-conformance to corrective action requests.

Inspections by the Chief Inspector or his representative will be by appointment and the purpose would be to investigate complaints received by the Inspector or to investigate serious incidents.

The Chief Inspector or his representative may issue prohibition notices to stop the activities at the works until the situation investigated has been resolved or he may issue an improvement notice whereby the Contractor will have a period to rectify any hazard identified by the inspector.

The audits contemplated in regulation 4.(1)(d) of the Construction Regulations, 2003 will be carried out by the Employer or his appointed Safety Agent.

The intervals for the audits shall be agreed between the Contractor and the Employer or his Safety Agent during the preparation of the Contractor's Health and Safety Plan, but shall be carried out at least once every month or at such shorter interval that an inspector may require. The Employer or his Safety Agent shall provide at least 7 calendar days notice prior to the conducting of an audit.

The findings of each audit will be made known to the Contractor and the Employer in a report prepared by the Employer or his Safety Agent and will be submitted to all parties within seven working days of the respective audit being completed. Any shortfalls identified will be documented in the audit report together with the Contractor's proposals to rectify the same. All audit reports will be filed in the Health and Safety File.

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|------------|-----------|-----------|----------|-----------|-----------|
| | | | | | |
| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

A date for a follow up audit will be negotiated with the Contractor to verify the implementation of all actions to rectify shortfalls as identified in the audit report .

The Contractor will ensure that the same arrangement detailed above be implemented with his Contractors to ensure his compliance with the Construction Regulations and contemplated in regulation 5. (3)(c).

The audits described above only constitutes part compliance by the Employer or the Safety Agent with regulation 4.(1)(c) of the Construction Regulations, 2003.

The Employer or Safety Agent will be entitled to carry out additional audits or follow-up audits, as the case may be, at any time during the construction period provided that:

- i) The audit or follow-up audit are carried out during ordinary working hours, and
- ii) The Employer or Safety Agent gives the Contractor at least 24 hours notice of his intention to carry out such audits.

The Contractor's employees indicated in Section 9.1 will be present during any audit carried out by the Employer or his Safety Agent.

10.1.1 The scheduled items for health and safety will be as specified in clause 31 of section 001 of the Standard Specifications.

10.1.2 The Contractor shall price all items scheduled in this section of the schedule of quantities to enable the Employer to comply with clause 4.1.(h) of the Construction Regulations, 2003. Failure by the Contractor to price these items will force the Employer to reject the Contractor's tender in terms of clause 4.(4) of the Construction Regulations, 2003.

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| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

FORMA'S

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

COMPANY LETTER HEAD

Attention: (**Assistant Construction Supervisor's Name**)

I, (**contractor's name**) hereby appoint **assistant construction supervisor's name**) as the assistant supervisor responsible for **site address**) to carry out the construction work of (**description of construction work and area of responsibility**).

In terms of this appointment you are required to ensure that all construction work performed under your supervision is carried out as follows:

1. By persons suitably trained and competent to do such work;
2. That all persons are aware and understand the hazards attached to the work being carried out;
3. That the required risk assessments are carried out;
4. That precautionary measures are identified and implemented;
5. That discipline is enforced at the construction site at all times;
6. That all identified statutory requirements are met; and
7. That any other interest in terms of health and safety with respect to the responsible area is met.
8. You will accept the duties of the Construction Supervisor in his absence.

You are required to report any deviations of the above-mentioned instruction to **construction supervisor's name**) and in his absence to the contractor's representative.

This appointment is valid from (**date**) to the completion of the stipulated construction work.

You shall submit a written weekly report any non-compliance with the construction Regulations, 2003.

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|--|--------------------|---------------|
| _____ Contractor's Representative full name | _____ Signature | _____ Date |
| | | |

Kindly confirm your acceptance of this appointment by completing the following:

I, (**assistant construction supervisor**) understand the implications of the appointment as detailed above and confirm my acceptance.

| | | |
|--|--------------------|---------------|
| _____ Assistant construction supervisor's | _____ Signature | _____ Date |
|--|--------------------|---------------|

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| <div style="border: 1px solid black; width: 100px; height: 20px; margin: 0 auto;"></div> <div style="text-align: center; font-size: small;">Contractor</div> | <div style="border: 1px solid black; width: 100px; height: 20px; margin: 0 auto;"></div> <div style="text-align: center; font-size: small;">Witness 1</div> | <div style="border: 1px solid black; width: 100px; height: 20px; margin: 0 auto;"></div> <div style="text-align: center; font-size: small;">Witness 2</div> | <div style="border: 1px solid black; width: 100px; height: 20px; margin: 0 auto;"></div> <div style="text-align: center; font-size: small;">Employer</div> | <div style="border: 1px solid black; width: 100px; height: 20px; margin: 0 auto;"></div> <div style="text-align: center; font-size: small;">Witness 1</div> | <div style="border: 1px solid black; width: 100px; height: 20px; margin: 0 auto;"></div> <div style="text-align: center; font-size: small;">Witness 2</div> |
|--|---|---|--|---|---|

COMPANY LETTER HEAD

Attention: (**Safety Officer's Name**)

I, **contractor's name**) hereby appoint **safety officer's name**) as the Construction Health and Safety Officer responsible for **site address**) to manage all the health and safety issues as required in terms of the Act by establishing a health and safety program with elected health and safety Representatives.

You shall ensure that all the requirements in terms of the Act and in particular in terms of the Construction Regulations, 2003 are met. You shall also ensure that all appointed sub-contractors comply with the requirements as stipulated in the Construction Regulations, 2003.

You shall further ensure that all records, registers and required lists are maintained and shall stop construction work upon identifying any non-compliance by any contractor; this includes stopping any work should the competency of the person carrying out such work be questionable.

This appointment is valid from (**date**) to the completion of the stipulated construction work.

| | | |
|---------------------------------------|-----------|-------|
| _____ | _____ | _____ |
| Contractor's Representative full name | Signature | Date |

.....

Kindly confirm your acceptance of this appointment by completing the following:

I, **construction health and safety officer's name**) understand the implications of the appointment as detailed above and confirm my acceptance.

| | | |
|--|-----------|-------|
| _____ | _____ | _____ |
| Construction Health & Safety Officer's full name | Signature | Date |

| | | | | | |
|------------|-----------|-----------|----------|-----------|-----------|
| | | | | | |
| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

COMPANY LETTER HEAD

Attention: **(Construction Vehicle and Mobile Plant Inspector)**

I, **(contractor's name)** hereby appoint **(construction vehicles and mobile plant inspector's name)** as the construction vehicles and mobile plant inspector responsible for **(site address)** to inspect on a daily basis all construction vehicles and mobile plant, as per the provided checklist.

You shall ensure that when becoming aware of any health and safety hazards in respect to construction vehicles and mobile plant that these hazards are reported in writing to the Construction Health and Safety Officer and Construction supervisor and the necessary precautionary measures are taken and enforced.

You shall further ensure that the requirements of the Construction Regulations, 2003 are at all times met.

This appointment is valid from **(date)** to the completion of the stipulated construction work.

Contractor's Representative full name Signature Date

.....
Kindly confirm your acceptance of this appointment by completing the following:

I, **construction vehicles and mobile plant inspector's full name)** understand the implications of the appointment as detailed above and confirm my acceptance.

Construction vehicles and mobile plant Signature Date
inspector's full name

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

COMPANY LETTER HEAD

Attention: **(Sub-Contractor's Name)**

I, **(contractor's name)** hereby appoint **(sub-contractor's name)** as the sub-contractor responsible for **(site address)** to carry out the construction work of **(description of construction work)**.

You shall ensure that you meet all the requirements in terms of the Act and in particular in terms of the section 37(2) agreement and the Construction Regulations, 2003. You shall also ensure that all contractors appointed by yourself and reporting to you comply with the requirements as stipulated in the Construction Regulations, 2003.

You shall also ensure that all the information and specifications to ensure that the construction work is carried out in a safe manner are carried over to all contractors appointed and reporting to you.

You shall further ensure that all records, registers and required lists are maintained and that all persons appointed to carry out tasks as stipulated by these regulations are competent and have the necessary resources to complete their tasks effectively in such a manner that health and safety is not in any manner compromised.

This appointment is valid from **(date)** to the completion of the stipulated construction work.

You shall submit a written weekly report on all shortfalls that have not been met in terms of these regulations.

Contractor's Representative full name Signature Date

.....
Kindly confirm your acceptance of this appointment by completing the following:

I, **(sub-contractor's name)** understand the implications of the appointment as detailed above and confirm my acceptance.

Sub-Contractor's Representative full name Signature Da

| | | | | | |
|------------|-----------|-----------|----------|-----------|-----------|
| | | | | | |
| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

COMPANY LETTER HEAD

Attention: **(Construction Supervisor's Name)**

I, **(contractor's name)** hereby appoint **(construction supervisor's name)** as the Supervisor responsible for **(site address)** to carry out the construction work of **(description of construction work and area of responsibility)**.

In terms of this appointment you are required to ensure that all construction work performed under your supervision is carried out as follows:

1. By persons suitably trained and competent to do such work;
2. That all statutory appointments have been completed;
3. That, where required, health and safety committees are established and that meetings are accordingly held;
4. That all persons are aware and understand the hazards attached to the work being carried out;
5. That the required risk assessments are carried out;
6. That precautionary measures are identified and implemented;
7. That discipline is enforced at the construction site at all times;
8. That all identified statutory requirements are met; and
9. That any other interests in terms of health and safety with respect to the responsible area is met.
10. You will in writing delegate your duties to the Assistant Construction Supervisor while absent from site.

You are required to report any deviations of the above-mentioned instructions to **contractor's name**. This appointment is valid from **(date)** to the completion of the stipulated construction work. You shall submit a written weekly report on all shortfalls that have not been met in terms of these regulations.

Contractor's Representative full name

Signature

Date

.....
Kindly confirm your acceptance of this appointment by completing the following:

I, **(construction supervisor)** understand the implications of the appointment as detailed above and confirm my acceptance.

Construction Supervisor's full name

Signature

Date

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

COMPANY LETTER HEAD

Attention: **(Excavation Work Supervisor's Name)**

I, **(contractor's name)** hereby appoint **(excavation work supervisor's name)** as the excavation work supervisor responsible for **(site address)** to supervise and carry out all the necessary inspections in terms of all excavation work as per the provided checklist.

You shall ensure that when becoming aware of any health and safety hazards in respect to excavation work that that these hazards are reported in writing to the Construction Health and Safety Officer and Construction supervisor and the necessary precautionary measures are taken and enforced.

You shall further ensure that the requirements of the Construction Regulations are at all times met. This appointment is valid from **(date)** to the completion of the stipulated construction work.

Contractor's representative full name Signature Date

.....
Kindly confirm your acceptance of this appointment by completing the following:

I, **excavation work supervisor's full name)** understand the implications of the appointment as detailed above and confirm my acceptance.

Excavation Work Supervisor full name Signature Date

| | | | | | |
|------------|-----------|-----------|----------|-----------|-----------|
| | | | | | |
| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

COMPANY LETTER HEAD

Attention: **(Form work and Support work supervisor's name)**

I, **(contractor name)** hereby appoint **form work and support work supervisor's name** as the formwork and support work supervisor responsible for **(site address)** to supervise and carry out all the necessary inspections in terms of all formwork and support work as per the provided checklist.

You shall ensure that when becoming aware of any health and safety hazards in respect to formwork and support work that the necessary precautionary measures are taken and enforced. Hazards are reported in writing to the Construction, Health and Safety Officer and the Construction Supervisor.

You shall further ensure that the requirements of the Construction Regulations are at all times met. This appointment is valid from **date)** to the completion of the stipulated construction work.

| | | |
|---------------------------------------|-----------|------|
| Contractor's representative full name | Signature | Date |
|---------------------------------------|-----------|------|

Kindly confirm your acceptance of this appointment by completing the following:

I, **(formwork and support work supervisor's full name)** understand the implications of the appointment as detailed above and confirm my acceptance.

| | | |
|---|-----------|------|
| Formwork and Support Work Supervisor's full name | Signature | Date |
|---|-----------|------|

| | | | | | |
|------------|-----------|-----------|----------|-----------|-----------|
| | | | | | |
| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

COMPANY LETTER HEAD

Attention: **(Ladder Inspector's Name)**

I, **(contractor's name)** hereby appoint **(ladder inspector's name)** as the ladder inspector responsible for **site address** to manage ladders on site. You should inspect the ladders as per the checklist at least once a week.

You shall ensure that when becoming aware of any health and safety hazards in respect to ladders that these hazards are reported in writing to the Construction Health and Safety Officer and Construction supervisor and the necessary precautionary measures are taken and enforced.

You shall further ensure that the requirements of the Construction Regulations, 2003 are at all times met.

This appointment is valid from **date** to the completion of the stipulated construction work.

Contractor's representative full name Signature Date

Kindly confirm your acceptance of this appointment by completing the following:

I, **ladder inspector's full name** understand the implications of the appointment as detailed above and confirm my acceptance.

Ladder inspector's full name Signature Date

| | | | | | |
|------------|-----------|-----------|----------|-----------|-----------|
| | | | | | |
| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

COMPANY LETTER HEAD

Attention: **(Risk Assessor's Name)**

I, **(contractor's name)** hereby appoint **(risk assessor's name)** as the construction site risk assessor responsible for **(site address)** to carry out risk assessments prior to the commencement of construction work and any other risk assessment that may be required for the duration of the construction work.

You shall ensure that all risks are identified and analyzed and that safe working procedures are drafted and implemented to reduce, mitigate or controls the hazards that were identified.

You will at least use the risk evaluation program with the provided checklists.

This appointment is valid from **date)** to the completion of the stipulated construction work.

Contractor's representative full name

Signature

Date

Kindly confirm your acceptance of this appointment by completing the following:

I, **construction site risk assessor's name)** understand the implications of the appointment as detailed above and confirm my acceptance.

Construction site Risk Assessor's
full name

Signature

Date

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

COMPANY LETTER HEAD

Attention: **(Scaffolding Supervisor's Name)**

I, **(contractor's name)** hereby appoint **scaffolding supervisor's name** as the scaffolding supervisor responsible for **site address** to supervise and carry out all the necessary inspections in terms of all scaffolding work. (Whether newly erected, altered or moved as per the provided checklist)

You shall ensure that when becoming aware of any health and safety hazards in respect to scaffolding work that these hazards are reported in writing to the Construction Health and Safety Officer and Construction supervisor and the necessary precautionary measures are taken and enforced.

You shall further ensure that the requirements of the Construction Regulations, 2003 are at all times met.

This appointment is valid from **(date)** to the completion of the stipulated construction work.

Contractor's Representative full name

Signature

Date

Kindly confirm your acceptance of this appointment by completing the following:

I, **(scaffolding supervisor's full name)** understand the implications of the appointment as detailed above and confirm my acceptance.

Scaffolding Supervisor's full name

Signature

Date

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

COMPANY LETTER HEAD

Attention: **(Stacking and Storage Supervisor's Name)**

I, **(contractor's name)** hereby appoint **(stacking and storage supervisor's name)** as the stacking and storage supervisor responsible for **(site address)** to manage all stacking and storage on site.

You shall inspect all new stacking and thereafter as often as needed according to the checklist.

You shall ensure that when becoming aware of any health and safety hazards in respect to stacking and storage that these hazards are reported in writing to the Construction Health and Safety Officer and Construction supervisor and the necessary precautionary measures are taken and enforced.

You shall further ensure that the requirements of the Construction Regulations are at all times met. On identifying any shortfalls or hazards convey such information in writing to the construction supervisor.

This appointment is valid from **(date)** to the completion of the stipulated construction work.

Contractor's Representative full name

Supervisor

Date

Kindly confirm your acceptance of this appointment by completing the following:

I, **(stacking and storage supervisor's full name)** understand the implications of the appointment as detailed above and confirm my acceptance.

Stacking and Storage Supervisor's
Full name

Signature

Date

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

COMPANY LETTER HEAD

Attention: The Provincial Director
The Department of Labour
[Postal Address*]

In terms of regulation 3.(1) of the Construction Regulations , 2003 promulgated on 18 July 2003 in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), we hereby notify you of our intention to commence construction works on the abovementioned contract, which:

Includes the demolition of a structure exceeding a height of 3 meters,
Includes the use of explosives to perform the construction work,
Includes the dismantling of fixed plant at a height greater than 3 meters,
Will exceed 30 days or will involve more than 300 person days of construction,
Includes excavation work deeper than 1 meter, or
Includes working at a height greater than 3 meters above ground or a landing.

1.1 The Principal Contractor is: [Contractor's Name]
[Contractor's postal address]
[Contractor's postal address]
Att: [Contractor's contact person and telephone number]

1.2 The Client (Employer) is: [Employer's Name]
[Employer's postal address]
Att: [Employer's contact person and telephone number]

1.3 The Client's Safety Agent is: [Safety Agent's Name]
[Safety Agent's postal address]
Att: [Safety Agent's contact person and telephone number]

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

1.4 The Contractor's Construction Supervisor is: [Contractor's Construction Supervisor's name and telephone number]

2.1 The physical address of the works is: [Physical address of works]
[Physical address of works]

2.2 The nature of the construction works is: [Provide a description of the works].

2.3 The expected commencement date of the Works is : [Insert expected commencement date]

2.4 The expected completion date of the works is : [Insert expected completion date]

2.5 The estimated maximum number of persons on the construction site:

2.6 A total of _____ contractors will be accountable to the Principal Contractor on the construction site during the execution of the Works. The names of the contractors already chosen are as follows: [Provide a list of the Contractor's subcontractors already appointed]

3.1 The Principal Contractor's compensation registration number is: _____

3.2 In terms of regulation 3.(3) a copy of this notification will be kept on site for

inspection. We trust the above is in order.

Yours faithfully,

Signature

Date

* Postal Address of Provincial Director as indicated in regulation 1 of the General Administrative Regulations, 1996.

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2

In terms of Regulation 4(1)(b) of the Construction Regulations 2003 the following hazards anticipated with the scope of work have been identified.

The list of potential hazards is by no means intended to be all inclusive and is not limited to this list, and it remains the responsibility of the Contractor to identify all possible hazards with regards to his scope of work and to put measures in place to mitigate, reduce or control these hazards.

1. Commissioning of new installations
2. Confined space entry
3. Demolition/breaking into existing structures
3. Excavation shoring / brazing
4. Excavations been flooded during rain season
5. Explosives
7. Hazardous material handling / storage / management
8. Heat stress
9. Loading and off loading vehicles
10. Manual handling of materials
11. Plant and equipment integrity
12. Public and traffic safety
13. Requirements for plant isolations
14. Roofing and Cladding operations
15. Safe usage and storage of Oxygen, Acetylene and LPG cylinders
16. Scaffolding
17. Stacking and storage of equipment / materials
18. Tie-ins into existing equipment
19. Usage of compressed air and equipment
20. Work involving radioactive sources
21. Working in operational areas
22. Working on live electrical installations / sub-stations / MCC rooms
23. Working on moving equipment.

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|------------|-----------|-----------|----------|-----------|-----------|
| | | | | | |
| Contractor | Witness 1 | Witness 2 | Employer | Witness 1 | Witness 2 |

Contractor

Witness 1

Witness 2

Employer

Witness 1

Witness 2



GROUND FLOOR PLAN

1:50

